

ANNUAL REPORT

OF THE

DEPARTMENT OF THE INTERIOR

FOR THE

Fiscal Year ended March 31, 1918

*PRINTED BY ORDER OF PARLIAMENT*



OTTAWA  
J. DE LABROQUERIE TACHÉ  
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY  
1919







*To His Excellency the Duke of Devonshire, K.G., P.C., G.C.M.G., G.C.V.O., etc., etc.,  
Governor General and Commander in Chief of the Dominion of Canada.*

MAY IT PLEASE YOUR EXCELLENCY:

The undersigned has the honour to lay before Your Excellency the report of the transactions of the Department of the Interior for the fiscal year ending March 31, 1918.

Respectfully submitted,

A. MEIGHEN,  
*Minister of the Interior.*

OTTAWA, July 2, 1918.







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REPORT  
OF THE  
DEPARTMENT OF THE INTERIOR  
1917-18

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The Hon. ARTHUR MEIGHEN,  
Minister of the Interior,  
Ottawa.

I have the honour to submit the forty-fifth Annual Report of the Department of the Interior, for the twelve months ending the 31st March, 1918.

Settlement in Dominion Lands throughout the West has been as satisfactory as the existing conditions would permit, and the revenue of the department shows a slight increase.

Preliminary plans for the establishment of a board to deal with the settlement of returned soldiers are now under way, and every possible effort has been put forth anticipating the requirements of the returned soldier as regards Dominion lands. Any lands becoming available for settlement under the Dominion Lands Act are immediately withdrawn from ordinary settlement so that the returned soldiers may have the first opportunity of location thereon.

The work carried on by the various branches of the department has been eminently satisfactory, as shown by the condensed statements hereunder and the more detailed reports of the individual branches.



STATEMENT showing Gross Cash Receipts received from all sources during the fiscal year ended March 31, 1918, compared with the receipts for the previous fiscal year.

| Source of Revenue.               | Fiscal Years. |               | Increase.    | Decrease.    | Net Increase. |
|----------------------------------|---------------|---------------|--------------|--------------|---------------|
|                                  | 1917-18.      | 1916-17.      |              |              |               |
|                                  | \$ cts.       | \$ cts.       | \$ cts.      | \$ cts.      | \$ cts.       |
| Dominion Lands.....              | 4,557,438 61  | 4,189,905 55  | 367,533 06   |              |               |
| School Lands.....                | 2,836,216 40  | 1,699,370 06  | 1,136,846 34 |              |               |
| Ordinance Lands.....             | 7,929 75      | 5,553 26      | 2,376 49     |              |               |
| Seed Grain.....                  | 2,613,708 67  | 3,652,729 05  |              | 1,039,020 38 |               |
| Casual Revenue.....              | 9,074 15      | 15,618 26     |              | 6,544 11     |               |
| Registration Fees—Yukon.....     | 562 25        | 796 85        |              | 234 60       |               |
| Fines and Forfeitures.....       | 170 00        |               | 170 00       |              |               |
| Fines and Forfeitures—N.W.T..    | 383 00        | 95 00         | 288 00       |              |               |
| Fines under Immigration Act...   | 3,133 00      | 2,089 72      | 1,043 28     |              |               |
| Chinese Immigration Revenue..    | 336,757 00    | 140,487 00    | 196,270 00   |              |               |
| Sales of Lands, Special Account. | 626,203 49    | 407,125 71    | 219,077 78   |              |               |
|                                  | 10,991,576 32 | 10,113,770 46 | 1,923,604 95 | 1,045,799 09 | 877,805 86    |



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STATEMENT of Receipts on account of Dominion Lands Revenue for the fiscal year ended March 31, 1918, as compared with the receipts for the previous fiscal year.

| Particulars.                              | 1917-18.     | 1916-17.     | Increase.  | Decrease. | Net Increase. |
|---|--------------|--------------|------------|-----------|---------------|
|   | \$ cts.      | \$ cts.      | \$ cts.    | \$ cts.   | \$ cts.       |
| Homestead Fees.....                       | 83,180 00    | 112,110 20   |            | 28,930 20 |               |
| Pre-emption Fees.....                     | 7,870 00     | 14,690 00    |            | 6,820 00  |               |
| Purchased Homestead Fees.....             | 2,040 00     | 2,660 00     |            | 620 00    |               |
| Improvements.....                         | 88,198 99    | 111,071 53   |            | 22,872 54 |               |
| Pre-emption Sales under Act 1908.....     | 2,596,932 35 | 2,326,402 52 | 270,529 83 |           |               |
| Purchased Homestead Sales.....            | 245,834 54   | 254,017 48   |            | 8,182 94  |               |
| General Sales.....                        | 191,729 12   | 112,636 24   | 79,092 88  |           |               |
| Map Sales, Office Fees, etc.....          | 12,066 22    | 13,976 95    |            | 1,910 73  |               |
| Rentals of Land.....                      | 10,603 38    | 10,112 04    | 491 34     |           |               |
| Survey Fees.....                          | 7,915 99     | 6,638 68     | 1,277 31   |           |               |
| Timber Dues.....                          | 482,006 25   | 429,403 09   | 52,603 16  |           |               |
| Grazing Rental.....                       | 125,300 69   | 128,341 50   |            | 3,040 81  |               |
| Grazing Lands, Improvements.....          | 1,172 60     | 1,639 80     |            | 467 20    |               |
| Coal Lands.....                           | 334,889 57   | 323,740 72   | 11,148 85  |           |               |
| Hay Permits.....                          | 10,861 62    | 9,834 20     | 1,027 42   |           |               |
| Mining Fees.....                          | 59,679 31    | 57,907 25    | 1,772 06   |           |               |
| Hydraulic Leases.....                     | 2,273 25     | 2,338 50     |            | 65 27     |               |
| Dredging Leases.....                      | 2,943 45     | 1,540 86     | 1,402 59   |           |               |
| Export Tax on Gold.....                   | 81,650 55    | 99,043 07    |            | 17,392 52 |               |
| Free Certificates for Export of Gold..... | 35 00        | 38 00        |            | 3 00      |               |
| Stone Quarries.....                       | 7,117 30     | 7,795 48     |            | 678 18    |               |
| Irrigation Fees.....                      | 458 75       | 629 00       |            | 170 25    |               |
| Rent of Water-power.....                  | 1,210 00     | 600 00       | 610 00     |           |               |
| Irrigation Sales.....                     | 11,595 54    | 14,147 75    |            | 2,552 21  |               |
| Fees re Board of Examiners, D.L.S.....    | 250 00       | 560 00       |            | 310 00    |               |
| Patent and Interchange Fees.....          | 160 00       | 250 00       |            | 90 00     |               |
| Suspense Account.....                     | 3,598 95     | 3,890 34     |            | 291 39    |               |
| Interim Receipt Account, Yukon.....       | 153 00       | 190 00       |            | 37 00     |               |
| Sand, Stone and Gravel.....               | 1,094 98     | 2,089 46     |            | 994 48    |               |
| Petroleum.....                            | 124,179 69   | 92,242 37    | 31,937 32  |           |               |
| Forestry Branch—Sale of Trees, etc.....   | 3,907 50     | 3,054 22     | 853 28     |           |               |
| Fishing Permits.....                      | 67 00        | 81 00        |            | 14 00     |               |
| Potash Leases.....                        | 60 00        |              | 60 00      |           |               |
| Miscellaneous.....                        | 4,242 52     | 381 85       | 3,860 67   |           |               |
| Rocky Mountain Park.....                  | 43,632 08    | 40,290 93    | 3,341 15   |           |               |
| Jasper Park.....                          | 5,292 83     | 2,828 73     | 2,464 10   |           |               |
| Waterton Lakes.....                       | 1,307 65     | 1,332 00     |            | 24 35     |               |
| Yoho Park.....                            | 502 40       | 385 36       | 117 04     |           |               |
| Buffalo Park.....                         | 142 46       | 257 23       |            | 114 77    |               |
| Elk Island Park.....                      | 1 00         | 8 25         |            | 7 25      |               |
| Glacier Park.....                         | 331 90       | 542 25       |            | 210 35    |               |
| Moose Mountain Buffalo Park.....          |              | 1 50         |            | 1 50      |               |
| Antelope Park.....                        | 905 20       | 205 20       | 700 00     |           |               |
| Fort Anne Park.....                       | 45 00        |              | 45 00      |           |               |
|   | 4,557,438 61 | 4,189,905 55 | 463,334 00 | 95,800 94 | 367,533 06    |
| Refunds.....                              | 113,680 44   | 134,243 14   |            | 20,562 70 |               |
|   | 4,443,758 17 | 4,055,662 41 | 463,334 00 | 75,238 24 | 388,095 76    |

In addition to \$191,729.12 on account of general sales, the department received \$626,203.49 from sales of railway lands, which sum, as provided for by Orders in Council, has been credited to special accounts in the books of the Finance Department.



STATEMENT showing Receipts on Account of Dominion Lands, from July 1, 1872, to March 31, 1918.

| Fiscal Year.                 | Homestead Fees. | Pre-emption Fees. | Improve-ments. | SALES.       |            | Map Sales, Office and Registration Fees, etc. | Dominion Lands Surveyors' Examination Fees. | Rents, Survey Fees, Miscellaneous, including Trust Account. | Purchased, Homestead, Inspection, Cancellation and Sundry Fees. | Timber Dues. |
|------------------------------|-----------------|-------------------|----------------|--------------|------------|---|---|---|---|--------------|
|                              |                 |                   |                | Cash.        | Scrip.     |   |   |   |   |              |
|                              |                 |                   |                |              |            |   |   |   |   |              |
| 1872-73.....                 | 6,960 00        |                   |                | 19,170 20    |            |   |   |   |   | 109 25       |
| 1873-74.....                 | 7,310 00        |                   |                | 19,834 75    |            |   |   | 125 50  |   | 2,710 55     |
| 1874-75.....                 | 11,510 00       |                   |                | 13,666 90    |            | 129 00  |   |   |   | 2,335 25     |
| 1875-76.....                 | 4,680 00        |                   |                | 3,478 94     | 320 00     |   |   |   |   | 387 00       |
| 1876-77.....                 | 2,250 00        |                   |                | 1,085 86     | 136,955 16 |   |   |   |   | 320 00       |
| 1877-78.....                 | 14,540 00       |                   |                | 2,794 86     | 120,159 54 |   | 180 00                                      | 100 00  | 40 00   | 1,620 00     |
| 1878-79.....                 | 17,690 00       |                   |                | 4,998 39     | 210,904 84 | 81 00   | 310 00                                      |   | 290 00  | 325 00       |
| 1879-80.....                 | 41,255 00       | 10,241 43         |                | 45,708 97    | 81,685 86  | 245 40  | 580 00                                      | 13 70   | 410 00  | 25,121 46    |
| 1880-81.....                 | 20,450 00       | 10,801 75         | 269 00         | 71,170 17    | 70,828 30  | 985 40  | 420 00                                      | 183 25  | 1,780 00  | 32,028 34    |
| 1881-82.....                 | 54,155 00       | 39,843 90         | 1,758 00       | 1,240,328 27 | 50,590 84  | 3,036 45                                      | 890 00                                      | 58 10   |   | 58,753 14    |
| 1882-83.....                 | 73,015 00       | 54,725 00         | 7,114 91       | 516,092 21   | 33,638 40  | 3,109 50                                      | 890 00                                      | 501 77  |   | 90,066 46    |
| 1883-84.....                 | 41,580 00       | 28,810 00         | 2,596 11       | 424,863 36   | 40,919 67  | 1,289 55                                      | 530 00                                      | 45,766 53   | 1,713 00  | 147,983 10   |
| 1884-85.....                 | 25,645 00       | 17,100 00         | 2,328 75       | 199,275 32   | 45,875 60  | 1,621 82                                      | 370 00                                      | 50,068 57   | 2,685 00  | 87,474 99    |
| 1885-86.....                 | 26,110 00       | 14,371 00         | 1,101 50       | 76,140 41    | 214,657 97 | 1,339 34                                      | 360 00                                      | 20,070 00   | 5,025 40  | 64,820 31    |
| 1886-87.....                 | 19,614 00       | 6,887 93          | 1,971 55       | 48,175 76    | 337,640 19 | 1,171 39                                      | 240 00                                      | 44,561 00   | 7,778 53  | 65,111 74    |
| 1887-88.....                 | 23,691 00       | 4,830 00          | 1,918 35       | 52,238 36    | 313,522 67 | 1,660 75                                      | 240 00                                      | 20,591 41   | 12,078 50   | 94,964 55    |
| 1888-89.....                 | 39,460 00       | 10,550 00         | 4,128 48       | 57,513 16    | 318,238 57 | 1,410 16                                      | 220 00                                      | 10,389 57   | 20,402 50   | 90,290 00    |
| 1889-90.....                 | 35,920 00       | 8,580 00          | 3,250 54       | 54,896 85    | 228,744 47 | 2,099 07                                      | 190 00                                      | 3,316 23  | 20,232 50   | 84,642 95    |
| 1890-91.....                 | 29,164 10       |                   | 6,302 61       | 91,664 98    | 171,425 14 | 1,854 78                                      | 88 00                                       | 7,951 05  | 14,712 50   | 102,902 71   |
| 1891-92.....                 | 46,994 00       |                   | 6,472 31       | 108,901 01   | 97,822 41  | 2,147 31                                      | 135 00                                      | 29,898 49   | 23,104 00   | 106,461 35   |
| 1892-93.....                 | 37,689 74       |                   | 7,113 50       | 93,671 67    | 77,231 18  | 975 20  | 82 00                                       | 18,509 35   | 22,014 00   | 105,865 24   |
| 1893-94.....                 | 36,462 26       |                   | 3,497 76       | 53,254 71    | 27,840 96  | 973 11  | 40 00                                       | 13,457 09   | 11,097 90   | 81,290 51    |
| 1894-95.....                 | 29,664 88       |                   | 3,567 90       | 37,293 71    | 23,269 62  | 695 99  |   | 6,271 77  | 6,566 50  | 74,079 20    |
| 1895-96.....                 | 18,278 00       |                   | 3,163 15       | 46,373 98    | 46,929 65  | 610 78  | 50 00                                       | 21,679 31   | 6,810 50  | 61,923 47    |
| 1896-97.....                 | 21,179 00       |                   | 3,737 01       | 49,335 53    | 16,929 38  | 795 05  | 70 00                                       | 19,421 98   | 8,527 00  | 68,992 82    |
| 1897-98.....                 | 34,780 00       |                   | 5,649 63       | 80,178 64    | 28,918 14  | 1,987 40                                      | 10 00                                       | 21,242 66   | 10,042 50   | 119,313 78   |
| 1898-99.....                 | 58,235 00       |                   | 4,297 62       | 116,598 35   | 21,307 58  | 1,262 05                                      | 20 00                                       | 75,085 95   | 13,549 00   | 155,360 63   |
| 1899-1900.....               | 72,690 00       |                   | 4,835 81       | 103,247 58   | 88,756 22  | 1,258 85                                      | 190 00                                      | 38,072 54   | 14,937 00   | 126,345 82   |
| 1900-1901.....               | 79,910 00       |                   | 5,213 32       | 40,360 93    | 326,270 03 | 3,874 14                                      | 165 00                                      | 70,970 54   | 12,722 00   | 209,399 32   |
| 1901-1902.....               | 144,425 00      |                   | 8,481 46       | 66,950 21    | 169,767 13 | 5,792 96                                      | 370 00                                      | 71,997 30   | 663 00  | 207,790 90   |
| 1902-1903.....               | 320,409 65      |                   | 11,829 08      | 155,507 59   | 158,452 66 | 5,911 96                                      | 365 00                                      | 125,158 56  | 595 00  | 470,916 93   |
| 1903-1904.....               | 255,772 36      |                   | 15,119 47      | 196,750 15   | 188,424 22 | 5,549 13                                      | 463 50                                      | 81,550 46   | 1,081 00  | 397,344 33   |
| 1904-1905.....               | 304,806 25      |                   | 21,571 25      | 154,128 04   | 19,644 59  | 4,879 13                                      | 906 50                                      | 144,924 31  | 1,205 00  | 266,951 46   |
| 1905-1906.....               | 417,834 25      |                   | 31,795 19      | 442,588 69   | 7,654 57   | 6,042 34                                      | 474 00                                      | 141,948 55  | 976 25  | 292,684 53   |
| 1906-1907 (nine months)..... | 215,449 55      |                   | 39,763 63      | 494,117 12   | 11,349 89  | 5,449 06                                      | 420 00                                      | 69,536 31   | 1,089 51  | 379,476 32   |
| 1907-1908.....               | 301,693 73      |                   | 71,139 47      | 656,303 03   | 92,311 24  | 7,727 29                                      | 690 00                                      | 148,914 00  | 1,283 50  | 473,608 94   |



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|                |              |              |              |               |              |            |           |              |            |              |
|----------------|--------------|--------------|--------------|---------------|--------------|------------|-----------|--------------|------------|--------------|
| 1908-1909..... | 389,039 00   | 141,550 15   | 70,928 86    | 951,442 28    | 20,136 27    | 196 55     | 1,040 00  | 75,596 96    | 9,946 50   | 269,837 52   |
| 1909-1910..... | 415,232 00   | 174,250 00   | 105,009 07   | 1,239,037 33  | 9,973 84     | 9,135 49   | 1,577 10  | 100,257 89   | 14,028 30  | 378,010 70   |
| 1910-1911..... | 445,135 00   | 156,485 00   | 143,227 13   | 1,193,756 04  | 1,437 84     | 8,730 01   | 1,310 00  | 42,111 92    | 20,142 85  | 387,054 96   |
| 1911-1912..... | 391,703 12   | 102,070 00   | 184,825 92   | 1,967,182 85  | 3,256 99     | 11,239 14  | 1,400 00  | 44,167 03    | 14,745 50  | 400,668 61   |
| 1912-1913..... | 337,055 00   | 85,940 00    | 168,904 42   | 1,650,491 87  | 6,157 27     | 14,483 91  | 1,040 00  | 17,866 65    | 11,380 00  | 463,738 75   |
| 1913-1914..... | 317,412 00   | 61,660 00    | 187,052 46   | 1,279,223 51  | 240 00       | 16,056 07  | 1,350 00  | 40,148 65    | 8,402 00   | 378,365 33   |
| 1914-1915..... | 238,295 00   | 28,720 00    | 114,982 17   | 691,122 56    | 80 00        | 14,290 23  | 970 60    | 32,218 77    | 4,776 10   | 310,934 29   |
| 1915-1916..... | 170,350 00   | 22,760 00    | 112,782 70   | 1,073,970 21  | .....        | 11,485 83  | 470 00    | 19,495 98    | 3,475 00   | 378,960 68   |
| 1916-1917..... | 112,110 20   | 14,690 00    | 112,711 33   | 2,707,203 99  | 332 61       | 13,976 95  | 560 00    | 21,212 91    | 2,910 00   | 429,403 09   |
| 1917-1918..... | 83,180 00    | 7,870 00     | 89,371 59    | 3,046,091 55  | 131 47       | 12,066 22  | 250 00    | 26,513 84    | 2,200 00   | 482,006 25   |
| Total .....    | 5,790,784 09 | 1,002,736 16 | 1,569,782 91 | 21,638,180 85 | 3,820,732 98 | 194,729 76 | 19,926 70 | 1,721,964 03 | 315,418 29 | 8,428,752 53 |



STATEMENT showing Receipts on Account of Dominion Lands from July 1, 1872, to March 31, 1918.

| Fiscal Year.                 | Grazing Lands. |           | Hay, Coal, Mining,<br>Stone Quarries<br>Export Tax on Gold, etc. |        | Canadian<br>National<br>Park. | Colonization Lands. |          | Gross<br>Revenue. | Refunds.   | Net<br>Revenue. |
|------------------------------|----------------|-----------|--|--------|-------------------------------|---------------------|----------|-------------------|------------|-----------------|
|                              | Scrip, etc.    |           | Scrip.   |        |                               | Cash.               | Scrip.   |                   |            |                 |
|                              | \$             | cts.      | \$   | cts.   |                               |                     |          | \$                | cts.       | \$              |
| 1872-73.....                 |                |           |  |        |                               |                     |          | 26,239 45         |            | 26,239 45       |
| 1873-74.....                 |                |           |  |        |                               |                     |          | 29,980 80         |            | 29,980 80       |
| 1874-75.....                 |                |           |  |        |                               |                     |          | 27,641 15         |            | 27,641 15       |
| 1875-76.....                 |                |           |  |        |                               |                     |          | 8,865 94          |            | 8,865 94        |
| 1876-77.....                 |                |           |  |        |                               |                     |          | 140,755 02        |            | 140,755 02      |
| 1877-78.....                 |                |           |  |        |                               |                     |          | 139,584 40        |            | 139,584 40      |
| 1878-79.....                 |                |           |  |        |                               |                     |          | 234,732 93        |            | 234,732 93      |
| 1879-80.....                 |                |           |  |        |                               |                     |          | 206,801 37        | 4,636 08   | 202,165 29      |
| 1880-81.....                 |                |           |  |        |                               |                     |          | 206,990 54        | 5,038 22   | 201,952 32      |
| 1881-82.....                 | 2,245 00       |           | 40 00  |        |                               | 354,036 17          |          | 1,805,734 87      | 10,687 55  | 1,795,047 32    |
| 1882-83.....                 | 22,844 43      |           | 913 91   |        |                               | 248,492 01          |          | 1,051,403 60      | 8,746 05   | 1,042,657 55    |
| 1883-84.....                 | 11,370 60      |           | 640 90   |        |                               | 253,713 40          |          | 1,001,776 67      | 9,220 50   | 992,556 17      |
| 1884-85.....                 | 17,089 75      |           | 815 63   |        |                               | 1,214 22            |          | 451,564 65        | 12,070 85  | 439,493 80      |
| 1885-86.....                 | 29,562 51      | 3,131 08  | 1,284 83   |        |                               |                     |          | 457,973 95        | 63,389 12  | 394,584 83      |
| 1886-87.....                 | 14,242 77      | 39,487 67 | 1,570 40   | 80 00  |                               |                     |          | 588,532 80        | 19,543 16  | 568,989 64      |
| 1887-88.....                 | 5,922 47       | 23,023 28 | 2,273 73   | 80 80  |                               |                     |          | 569,986 68        | 6,277 66   | 563,709 02      |
| 1888-89.....                 | 2,207 69       | 16,802 63 | 3,946 55   |        |                               |                     |          | 594,088 04        | 5,226 23   | 588,861 81      |
| 1889-90.....                 | 1,305 57       | 9,021 63  | 9,242 08   |        |                               |                     |          | 462,536 26        | 8,209 74   | 454,326 52      |
| 1890-91.....                 | 3,079 55       | 16,193 77 | 8,628 44   | 160 00 |                               |                     |          | 460,990 76        | 7,195 27   | 453,795 49      |
| 1891-92.....                 | 3,726 80       | 17,222 60 | 5,616 85   |        |                               | 5 28                | 4,460 50 | 452,151 08        | 15,291 39  | 436,859 69      |
| 1892-93.....                 | 6,380 80       | 11,542 39 | 6,266 13   |        |                               |                     |          | 392,324 43        | 18,314 97  | 374,009 46      |
| 1893-94.....                 | 5,740 79       | 7,687 86  | 6,243 15   |        |                               |                     |          | 250,069 12        | 4,544 01   | 245,525 11      |
| 1894-95.....                 | 5,353 72       | 8,628 00  | 5,229 54   |        |                               |                     |          | 202,983 10        | 4,365 99   | 198,617 11      |
| 1895-96.....                 | 7,071 86       | 6,255 90  | 5,813 51   |        |                               |                     |          | 227,694 93        | 8,368 79   | 219,326 14      |
| 1896-97.....                 | 4,715 01       | 2,500 00  | 8,518 18   |        |                               |                     |          | 206,853 57        | 15,010 54  | 191,843 03      |
| 1897-98.....                 | 4,728 58       | 510 39    | 699,334 76   |        |                               |                     |          | 1,009,741 63      | 4,678 55   | 1,005,063 08    |
| 1898-99.....                 | 5,245 88       |           | 1,130,371 60   |        |                               |                     |          | 1,584,328 32      | 32,296 39  | 1,552,031 93    |
| 1899-1900.....               | 8,382 86       | 4,083 30  | 1,038,195 42   | 20 00  |                               |                     |          | 1,503,743 00      | 23,062 28  | 1,480,680 72    |
| 1900-1901.....               | 4,726 28       | 14,671 99 | 1,101,808 33   | 20 00  |                               |                     |          | 1,874,159 09      | 18,368 85  | 1,855,790 24    |
| 1901-1902.....               | 7,292 46       | 8,409 27  | 737,878 43   |        |                               |                     |          | 1,432,679 25      | 27,165 55  | 1,405,513 70    |
| 1902-1903.....               | 13,913 33      | 15,041 33 | 607,722 05   |        |                               |                     |          | 1,890,886 83      | 21,519 84  | 1,869,366 99    |
| 1903-1904.....               | 19,790 27      | 15,202 15 | 495,579 18   |        |                               |                     |          | 1,681,824 70      | 36,721 75  | 1,645,102 95    |
| 1904-1905.....               | 36,145 32      | 5,237 36  | 364,923 59   |        |                               |                     |          | 1,339,382 35      | 25,786 90  | 1,313,595 45    |
| 1905-1906.....               | 51,583 89      | 80 00     | 296,769 19   |        |                               |                     |          | 1,709,315 28      | 33,418 36  | 1,675,896 92    |
| 1906-1907 (nine months)..... | 43,711 91      | 400 00    | 213,852 59   |        |                               |                     |          | 1,490,503 31      | 35,117 48  | 1,455,385 83    |
| 1907-1908 *.....             | 43,211 78      | 4,048 01  | 266,415 31   |        |                               |                     |          | 2,094,579 17      | 115,080 04 | 1,979,499 13    |



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|                |              |            |               |          |            |           |               |              |               |
|----------------|--------------|------------|---------------|----------|------------|-----------|---------------|--------------|---------------|
| 1908-1909..... | 53,312 79    | 3,257 84   | 252,972 17    | .....    | .....      | .....     | 2,277,678 09  | 102,463 78   | 2,175,214 31  |
| 1909-1910..... | 67,434 29    | 5,081 47   | 460,154 29    | .....    | .....      | .....     | 3,022,446 13  | 121,431 15   | 2,901,014 98  |
| 1910-1911..... | 60,702 80    | 2,356 00   | 774,569 27    | .....    | .....      | .....     | 3,306,073 41  | 198,689 47   | 3,107,383 94  |
| 1911-1912..... | 69,519 41    | 1,520 00   | 729,240 42    | .....    | .....      | .....     | 3,978,036 73  | 197,641 35   | 3,780,405 38  |
| 1912-1913..... | 79,412 76    | .....      | 779,695 53    | 1,587 32 | .....      | .....     | 3,655,202 20  | 246,105 26   | 3,409,996 94  |
| 1913-1914..... | 84,926 15    | 320 00     | 889,863 15    | .....    | .....      | .....     | 3,313,819 65  | 277,309 33   | 3,036,510 32  |
| 1914-1915..... | 101,710 58   | 400 00     | 1,600,455 09  | .....    | .....      | .....     | 3,176,851 36  | 317,764 75   | 3,839,086 61  |
| 1915-1916..... | 118,955 02   | 100 00     | 493,280 07    | .....    | .....      | .....     | 2,443,630 92  | 143,942 57   | 2,299,697 35  |
| 1916-1917..... | 128,341 50   | .....      | 600,934 13    | .....    | .....      | .....     | 4,190,238 16  | 134,243 14   | 4,055,995 02  |
| 1917-1918..... | 125,300 69   | 240 00     | 630,427 95    | .....    | .....      | .....     | 4,557 810 08  | 113,680 44   | 4,444,129 64  |
| Total.....     | 1,271,107 87 | 242,515 92 | 14,231,487 25 | 1,947 32 | 857,461 08 | 30,460 50 | 91,731,194 77 | 2,452,613 35 | 59,278,581 42 |



STATEMENT showing Yearly the Gross Revenue (in cash only) received from all sources from July 1, 1897, to March 31, 1918.

| Fiscal Year.            | Dominion Lands. | School Lands. | Seed Grain.  | Ordnance Lands. | Fines and Forfeitures. | Registration Fees. | Casual Revenue. | Chinese Immigration Revenue. | Total.        |
|-------------------------|-----------------|---------------|--------------|-----------------|------------------------|--------------------|-----------------|------------------------------|---------------|
|                         | \$ cts.         | \$ cts.       | \$ cts.      | \$ cts.         | \$ cts.                | \$ cts.            | \$ cts.         | \$ cts.                      | \$ cts.       |
| 1898-1899               | 1,563,020 74    | 41,249 77     | 12,388 69    | 12,349 65       | 2,801 03               | 19,220 73          | 2,620 91        |                              | 1,653,651 52  |
| 1899-1900               | 1,410,883 48    | 220,874 78    | 15,271 84    | 11,043 53       | 1,452 92               | 21,751 90          | 3,664 00        |                              | 1,684,942 45  |
| 1900-1901               | 1,533,197 07    | 48,049 83     | 15,711 63    | 14,604 41       | 1,977 96               | 33,979 77          | 1,587 57        |                              | 1,649,108 30  |
| 1901-1902               | 1,254,333 56    | 193,410 75    | 20,293 06    | 16,967 36       | 1,955 61               | 50,854 99          | 3,900 62        |                              | 1,541,715 95  |
| 1902-1903               | 1,716,597 20    | 392,206 93    | 28,789 97    | 17,612 79       | 5,220 88               | 81,404 18          | 2,230 26        |                              | 2,244,062 21  |
| 1903-1904               | 1,478,106 33    | 233,769 62    | 26,122 30    | 30,491 34       | 5,911 92               | 109,233 73         | 3,402 94        |                              | 1,887,041 18  |
| 1904-1905               | 1,314,485 40    | 332,914 48    | 16,471 34    | 10,346 90       | 10,018 49              | 123,082 86         | 4,258 14        |                              | 1,811,577 61  |
| 1905-1906               | 1,701,580 71    | 608,960 79    | 12,577 29    | 10,893 17       | 3,304 77               | 180,310 73         | 8,496 09        |                              | 2,526,123 55  |
| 1906-1907 (nine months) | 1,478,749 51    | 724,353 73    | 10,850 06    | 6,663 90        | 21 00                  | 46,124 20          | 11,785 81       |                              | 2,278,548 21  |
| 1907-1908               | 1,998,219 92    | 708,045 83    | 12,899 84    | 8,674 95        | 1,650 00               | 2,256 65           | 20,069 03       |                              | 2,751,816 22  |
|                         | 15,449,473 92   | 3,503,836 51  | 171,376 02   | 139,651 06      | 34,314 58              | 668,219 74         | 62,015 37       |                              | 20,028,587 20 |
| 1908-1909               | 2,254,283 98    | 687,422,74    | 53,590 86    | 205,749 96      | 281 00                 | 1,352 13           | 26,224 29       |                              | 3,228,904 96  |
| 1909-1910               | 3,007,390 82    | 1,292,259 95  | 175,152 72   | 189,902 48      | 211 00                 | 1,471 49           | 42,625 96       |                              | 4,709,014 42  |
| 1910-1911               | 3,302,279 57    | 1,614,733 93  | 153,351 14   | 6,009 34        | 4,052 22               | 1,378 19           | 11,336 06       |                              | 5,093,140 45  |
| 1911-1912               | 3,973,259 74    | 1,594,533 96  | 119,634 13   | 11,566 46       | 10,510 48              | 1,066 05           | 32,824 65       | 971,339 00                   | 6,714,734 47  |
| 1912-1913               | 3,647,457 61    | 1,621,508 11  | 171,342 87   | 60,607 80       | 7,150 35               | 1,241 25           | 22,873 55       | 3,549,242 00                 | 9,081,423 54  |
| 1913-1914               | 3,313,259 65    | 1,215,822 37  | 176,736 89   | 5,805 98        | 7,888 50               | 966 50             | 27,884 47       | 2,644,593 00                 | 7,392,957 36  |
| 1914-1915               | 3,177,386 73    | 943,717 00    | 68,263 56    | 4,416 64        | 5,828 00               | 969 85             | 11,738 10       | 588,124 00                   | 4,800,443 88  |
| 1915-1916               | 2,443,479 92    | 934,965 37    | 2,525,528 50 | 5,997 98        | 3,075 21               | 908 15             | 28,002 62       | 19,389 00                    | 5,961,346 75  |
| 1916-1917               | 4,189,905 55    | 1,699,370 06  | 3,652,729 05 | 5,553 26        | 2,184 72               | 796 85             | 15,618 26       | 140,487 00                   | 9,706,644 75  |
| 1917-1918               | 4,557,438 61    | 2,836,216 40  | 2,613,708 67 | 7,919 75        | 3,686 00               | 562 25             | 9,074 15        | 336,757 00                   | 10,365,372 83 |
|                         | 33,866,142 18   | 14,440,549 89 | 9,710,038 39 | 503,539 65      | 44,867 48              | 10,712 71          | 228,202 11      | 8,249,931 00                 | 67,053,983 41 |
| Increases               | 18,416,968 26   | 10,936,713 38 | 9,538,662 37 | 363,888 59      | 10,552 90              |                    | 166,186 74      | 8,249,931 00                 | 47,025,396 21 |
| Decreases               |                 |               |              |                 |                        | 657,507 03         |                 |                              |               |



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STATEMENT of Revenue collected within the Canadian National Parks for the fiscal year ended March 31, 1918, as compared with the previous year.

| Particulars.                             | Fiscal Years. |           | Increase. | Decrease. | Net Increase.      |
|--|---------------|-----------|-----------|-----------|--------------------|
|  | 1917-18.      | 1916-17.  |           |           |                    |
| <i>Rocky Mountain Park.</i>              | \$ cts.       | \$ cts.   | \$ cts.   | \$ cts.   | \$ cts.            |
| Rent.....                                | 7,561 94      | 9,835 33  |           | 2,273 39  |                    |
| Timber dues.....                         | 1,541 46      | 1,002 98  | 538 48    |           |                    |
| Water rates (sulphur).....               | 779 86        | 1,166 66  |           | 386 80    |                    |
| Cold water rates.....                    | 7,026 78      | 7,640 53  |           | 613 75    |                    |
| Sewer rates.....                         | 2,552 80      | 2,882 58  |           | 329 78    |                    |
| Transfer fees.....                       | 106 00        | 118 00    |           | 12 00     |                    |
| Cave and basin bathing tickets.....      | 8,278 60      | 6,614 25  | 1,664 35  |           |                    |
| Livery licenses.....                     | 448 00        | 651 00    |           | 203 00    |                    |
| Pool, billiard and bowling licenses..... | 210 00        | 260 00    |           | 50 00     |                    |
| Boat licenses.....                       | 28 00         | 85 00     |           | 57 00     |                    |
| Butcher licenses.....                    | 60 00         | 120 00    |           | 60 00     |                    |
| Grazing rental.....                      | 397 00        | 382 00    | 15 00     |           |                    |
| Hot Springs bathing tickets.....         | 6,612 50      | 4,905 65  | 1,706 85  |           |                    |
| Telephone rent.....                      | 2,048 86      | 1,876 96  | 171 90    |           |                    |
| Fines.....                               | 177 00        | 236 00    |           | 59 00     |                    |
| Peddlers' licenses.....                  | 62 00         | 86 00     |           | 24 00     |                    |
| Guides' licenses.....                    | 50 00         | 65 00     |           | 15 00     |                    |
| Camping permits.....                     | 61 00         | 47 00     | 14 00     |           |                    |
| Cemetery lots.....                       | 58 00         | 34 00     | 24 00     |           |                    |
| Tea room licenses.....                   | 220 00        | 140 00    | 80 00     |           |                    |
| Hay Dues.....                            |               | 3 00      |           | 3 00      |                    |
| Sand.....                                | 27 42         | 28 00     |           | 0 58      |                    |
| Impounding fees.....                     | 2 00          | 16 00     |           | 14 00     |                    |
| Dog licenses.....                        | 262 00        | 323 00    |           | 61 00     |                    |
| Automobile licenses.....                 | 2,489 00      | 1,078 00  | 1,411 00  |           |                    |
| Scales.....                              | 40 50         | 24 25     | 16 25     |           |                    |
| Ice.....                                 | 6 00          | 306 23    |           | 300 23    |                    |
| Sale of lime.....                        | 15 35         | 15 25     | 0 10      |           |                    |
| Theatre licenses.....                    | 45 00         | 46 00     |           | 1 00      |                    |
| Building permits.....                    | 25 00         | 38 00     |           | 13 00     |                    |
| Miscellaneous.....                       | 98 56         | 94 26     | 4 30      |           |                    |
| Restaurant licenses.....                 |               | 30 00     |           | 30 00     |                    |
| Coal royalty and fees.....               |               | 5 00      |           | 5 00      |                    |
| Garden and dairy.....                    | 100 00        | 25 00     | 75 00     |           |                    |
| Gum machines.....                        | 42 00         | 108 00    |           | 66 00     |                    |
| Electricians' licenses.....              | 1 00          | 2 00      |           | 1 00      |                    |
| Boxing licenses.....                     | 10 00         |           | 10 00     |           |                    |
| Stone quarries.....                      | 119 45        |           | 119 45    |           |                    |
| Golf coupons.....                        | 2,069 00      |           | 2,069 00  |           |                    |
|  | 43,632 08     | 40,290 93 | 7,919 68  | 4,578 53  | 3,341 15           |
| <i>Glacier Park.</i>                     |               |           |           |           |                    |
| Rent.....                                | 329 15        | 227 25    | 101 90    |           |                    |
| Camping permits.....                     |               | 6 00      |           | 6 00      |                    |
| Gravel.....                              |               | 290 50    |           | 290 50    |                    |
| Grazing rental.....                      |               | 18 00     |           | 18 00     |                    |
| Timber dues.....                         | 1 75          | 0 50      | 1 25      |           |                    |
| Building permits.....                    | 1 00          |           | 1 00      |           |                    |
|  | 331 90        | 542 25    | 104 15    | 314 50    | Decrease<br>210 35 |
| <i>Jasper Park.</i>                      |               |           |           |           |                    |
| Timber dues.....                         | 80 78         | 574 84    |           | 494 06    |                    |
| Rent.....                                | 3,895 80      | 1,654 14  | 2,241 66  |           |                    |
| Building permits.....                    | 13 00         | 51 00     |           | 38 00     |                    |
| Boat licenses and ferry fees.....        | 5 00          | 3 50      | 1 50      |           |                    |
| Hay dues.....                            |               | 2 60      |           | 2 60      |                    |
| Peddlers' licenses.....                  | 12 00         | 6 00      | 6 00      |           |                    |
| Fines.....                               | 67 00         | 67 00     |           |           |                    |
| Grazing rental.....                      | 261 00        | 5 00      | 256 00    |           |                    |
| Guides' licenses.....                    | 27 50         | 18 00     | 9 50      |           |                    |
| Drivers' and livery licenses.....        | 144 00        | 92 00     | 52 00     |           |                    |



STATEMENT of Revenue collected within the Canadian National Parks for the fiscal year ended March 31, 1918, as compared with the previous year.  
—Continued.

| Particulars.                             | Fiscal Years. |            | Increase. | Decrease. | Net Increase.      |
|--|---------------|------------|-----------|-----------|--------------------|
|  | 1917-1918.    | 1916-1917. |           |           |                    |
|  | \$ cts.       | \$ cts.    | \$ cts.   | \$ cts.   | \$ cts.            |
| <i>Jasper Park—Con.</i>                  |               |            |           |           |                    |
| Camping permits.....                     | 85 50         | 80 00      | 5 50      |           |                    |
| Pool, billiard and bowling licenses..... | 210 00        | 123 00     | 87 00     |           |                    |
| Dog licenses.....                        | 176 00        | 131 40     | 44 60     |           |                    |
| Miscellaneous.....                       | 7 25          | 10 00      |           | 2 75      |                    |
| Restaurant licenses.....                 | 30 00         | 10 25      | 19 75     |           |                    |
| Telephone rent.....                      | 25 00         |            | 25 00     |           |                    |
| Theatre licenses.....                    | 10 00         |            | 10 00     |           |                    |
| Butcher licenses.....                    | 20 00         |            | 20 00     |           |                    |
| Cold-water rates.....                    | 223 00        |            | 223 00    |           |                    |
|  | 5,292 83      | 2,828 73   | 3,001 51  | 537 41    | 2,464 10           |
| <i>Yoho Park.</i>                        |               |            |           |           |                    |
| Timber dues.....                         | 27 00         | 29 00      |           | 2 00      |                    |
| Hay dues.....                            |               | 1 50       |           | 1 50      |                    |
| Rentals.....                             | 426 95        | 252 61     | 174 34    |           |                    |
| Transfer fees.....                       | 4 00          | 4 00       |           |           |                    |
| Camping permits.....                     |               | 7 00       |           | 7 00      |                    |
| Cemetery lots.....                       | 9 00          | 12 00      |           | 3 00      |                    |
| Grazing.....                             | 33 25         | 74 00      |           | 40 75     |                    |
| Ice.....                                 |               | 0 25       |           | 0 25      |                    |
| Building permits.....                    |               | 4 00       |           | 4 00      |                    |
| Miscellaneous.....                       | 2 20          | 1 00       | 1 20      |           |                    |
|  | 502 40        | 385 36     | 175 54    | 58 50     | 117 04             |
| <i>Waterton Lakes Park.</i>              |               |            |           |           |                    |
| Rent.....                                | 257 48        | 235 61     | 21 87     |           |                    |
| Camping permits.....                     | 112 00        | 63 00      | 49 00     |           |                    |
| Timber dues.....                         | 16 25         | 11 25      | 5 00      |           |                    |
| Fines.....                               | 13 00         | 217 10     |           | 204 10    |                    |
| Guides' licenses.....                    | 2 50          | 5 00       |           | 2 50      |                    |
| Grazing rental.....                      | 777 92        | 715 54     | 62 38     |           |                    |
| Hay dues.....                            | 2 50          | 1 50       | 1 00      |           |                    |
| Drivers' and livery licenses.....        | 22 00         | 2 00       | 20 00     |           |                    |
| Boat licenses.....                       | 22 00         | 47 00      |           | 25 00     |                    |
| Transfer fees.....                       |               | 2 00       |           | 2 00      |                    |
| Building permits.....                    | 42 00         | 2 00       | 40 00     |           |                    |
| Tea-room licenses.....                   | 20 00         | 10 00      | 10 00     |           |                    |
| Miscellaneous.....                       | 20 00         | 20 00      |           |           |                    |
|  | 1,307 65      | 1,332 00   | 209 25    | 233 60    | Decrease<br>24 35  |
| <i>Elk Island Park.</i>                  |               |            |           |           |                    |
| Timber dues.....                         |               | 2 25       |           | 2 25      |                    |
| Camping permits.....                     | 1 00          | 1 00       |           |           |                    |
| Boat licenses.....                       |               | 5 00       |           | 5 00      |                    |
|  | 1 00          | 8 25       |           | 7 25      | Decrease<br>7 25   |
| <i>Buffalo Park.</i>                     |               |            |           |           |                    |
| Hay dues.....                            | 80 10         | 7 20       | 72 90     |           |                    |
| Timber dues.....                         | 7 50          | 7 50       |           |           |                    |
| Miscellaneous.....                       | 54 86         | 242 53     |           | 187 67    |                    |
|  | 142 46        | 257 23     | 72 90     | 187 67    | Decrease<br>114 77 |



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STATEMENT of Revenue collected within the Canadian National Parks for the fiscal year ended March 31, 1918, as compared with the previous year.  
—Concluded.

| Particulars.                    | Fiscal Years. |            | Increase. | Decrease. | Net Increase.    |
|---------------------------------|---------------|------------|-----------|-----------|------------------|
|                                 | 1917-1918.    | 1916-1917. |           |           |                  |
|                                 | \$ cts.       | \$ cts.    | \$ cts.   | \$ cts.   | \$ cts.          |
| <i>Moose Mt., Buffalo Park.</i> |               |            |           |           |                  |
| Hay dues.....                   |               | 1 50       |           | 1 50      |                  |
|                                 |               | 1 50       |           | 1 50      | Decrease<br>1 50 |
| <i>Antelope Park.</i>           |               |            |           |           |                  |
| Grazing rental.....             | 905 20        | 205 20     | 700 00    |           |                  |
|                                 | 905 20        | 205 20     | 700 00    |           | 700 00           |
| <i>Fort Anne Park.</i>          |               |            |           |           |                  |
| Hay dues.....                   | 45 00         |            | 45 00     |           |                  |
|                                 | 45 00         |            | 45 00     |           | 45 00            |
| Totals.....                     | 52,160 52     | 45,851 45  | 12,228 03 | 5,918 96  | 6,309 07         |



THE LAND SITUATION, Manitoba, Saskatchewan and Alberta, Corrected to January 1st, 1918.

| Province.         | Surveyed Area. |           |             | Unsurveyed Area. |            |             | Total Area. |            |             |
|-------------------|----------------|-----------|-------------|------------------|------------|-------------|-------------|------------|-------------|
|                   | Land.          | Water.    | Total.      | Land.            | Water.     | Total.      | Land.       | Water.     | Total.      |
|                   |                |           |             |                  |            |             |             |            |             |
| Manitoba.....     | 31,714,366     | 4,257,637 | 35,972,003  | 111,856,332      | 13,343,963 | 125,200,295 | 143,570,698 | 17,601,600 | 161,172,298 |
| Saskatchewan..... | 77,023,135     | 1,902,336 | 78,925,471  | 75,317,185       | 6,845,344  | 82,162,529  | 152,340,320 | 8,747,680  | 161,088,000 |
| Alberta.....      | 84,372,309     | 2,284,610 | 86,653,919  | 74,506,351       | 2,219,130  | 76,725,481  | 158,878,660 | 4,503,740  | 163,382,400 |
| Totals.....       | 193,109,810    | 8,444,583 | 201,554,393 | 261,679,868      | 22,408,437 | 284,088,305 | 454,789,678 | 30,853,020 | 485,642,698 |

A large proportion of the unsurveyed area has not yet been explored, except in a very partial way, and the area suitable for agriculture cannot be estimated with any degree of accuracy.



## SESSIONAL PAPER No. 25

## DETAILED STATEMENT of Surveyed Areas in Manitoba, Saskatchewan and Alberta, January 1, 1918.

|   | Manitoba.  | Saskatchewan. | Alberta.   | Total.      |
|---|------------|---------------|------------|-------------|
|   | Acres.     | Acres.        | Acres.     | Acres.      |
| Area under Homestead (including Military Homesteads).....             | 8,423,000  | 27,127,800    | 18,106,700 | 53,657,500  |
| Area under Pre-emptions and Purchased Homesteads.....                 |            | 5,897,000     | 2,854,900  | 8,751,900   |
| Area under Northwest Half-Breeds Scrip, Sales and Special Grants..... | 5,085,454  | 2,289,800     | 1,215,000  | 8,590,254   |
| Area granted to Railway Companies.....                                | 3,566,997  | 15,177,063    | 13,120,014 | 31,864,074  |
| Area granted to Hudson's Bay Company.....                             | 1,212,300  | 3,090,100     | 2,094,800  | 6,397,200   |
| Area of School Land Endowment.....                                    | 1,585,400  | 3,967,400     | 3,457,800  | 9,010,600   |
| Area sold under Irrigation System.....                                |            | 76,921        | 980,680    | 1,057,601   |
| *Area under Timber Licenses.....                                      | 1,119,400  | 1,141,100     | 1,315,200  | 3,575,700   |
| *Area under Grazing Leases.....                                       | 66,500     | 2,723,200     | 2,563,100  | 5,352,800   |
| *Area of Forest Reserves and Parks.....                               | 2,606,400  | 6,195,700     | 16,813,400 | 25,615,500  |
| *Area Reserved for Forestry Purposes (Inside Surveyed Tract).....     | 746,300    | 1,430,000     | 1,666,000  | 3,842,300   |
| *Area of Road Allowances.....   | 972,848    | 1,464,041     | 1,275,049  | 3,711,938   |
| Area of Parish and River Lots.....                                    | 503,647    | 82,542        | 118,564    | 704,753     |
| Area of Indian Reserves.....  | 433,860    | 1,131,122     | 1,368,156  | 2,933,138   |
| Area of Indian Reserves Surrendered.....                              | 87,560     | 332,746       | 302,046    | 722,352     |
| *Area of Water-covered Lands (Surveyed Area)....                      | 4,257,637  | 1,902,336     | 2,284,610  | 8,444,583   |
| Area now available for entry.....                                     | 5,304,700  | 4,896,600     | 17,120,900 | 27,322,200  |
| Total Surveyed Area.....  | 35,972,003 | 78,925,471    | 86,656,919 | 201,554,393 |

\*Area now available for cultivation.



STATEMENT of Land Sales by Railway Companies having

| Year.                          | Hudson's Bay Company. |            | Canadian Pacific Railway Company. |             | Manitoba South-western Colonization. Railway Company. |           | Qu'Appelle Long-Lake and Saskatchewan Railroad and Steamboat Company. |           |
|--------------------------------|-----------------------|------------|-----------------------------------|-------------|---|-----------|---|-----------|
|                                | Acres.                | Amount.    | Acres.                            | Amount.     | Acres.  | Amount.   | Acres.  | Amount.   |
|                                |                       | \$         |                                   | \$          |   | \$        |   | \$        |
| 1893 .....                     |                       |            | 93,184                            | 295,288     | 14,164  | 57,559    | 1,603   | .....     |
| 1894 .....                     | 7,526                 | 48,225     | 43,155                            | 131,628     | 6,312   | 28,003    | 640   | .....     |
| 1895 .....                     | 4,431                 | 23,209     | 55,453                            | 176,950     | 5,623   | 22,330    | 2,391   | .....     |
| 1896 .....                     | 9,299                 | 52,410     | 66,624                            | 220,360     | 21,254  | 88,568    | 286   | .....     |
| 1897 .....                     | 10,784                | 53,277     | 135,681                           | 431,095     | 63,800  | 634,644   | 2,524   | .....     |
| 1898 .....                     | 62,000                | 310,000    | 242,135                           | 757,792     | 106,473   | 363,982   | 22,534  | .....     |
| 1899 .....                     | 56,875                | 274,625    | 261,832                           | 814,857     | 58,019  | 199,558   | 61,030  | 178,517   |
| 1900 .....                     | 70,196                | 352,631    | 379,091                           | 1,152,836   | 133,507   | 437,449   | 18,932  | 53,974    |
| 1901 .....                     | 82,308                | 399,804    | 339,981                           | 1,046,665   | 59,749  | 214,953   | 22,266  | 74,810    |
| 1902 .....                     | 269,577               | 1,412,332  | 1,362,478                         | 4,440,500   | 206,411   | 713,365   | 39,835  | 147,365   |
| 1903 .....                     | 330,046               | 1,939,804  | 2,260,722                         | 8,472,250   | 250,372   | 699,210   | 843,900   | 1,476,900 |
| 1904 .....                     | 144,857               | 879,910    | 857,474                           | 3,516,864   | 29,522  | 113,303   | .....   | .....     |
| 1905 .....                     | 139,721               | 865,905    | 411,451                           | 2,045,800   | 80,342  | 296,936   | .....   | .....     |
| 1906 .....                     | 236,191               | 1,863,375  | 1,012,322                         | 6,015,060   | 83,418  | 360,889   | .....   | .....     |
| 1907 9 months to<br>March 31.. | 69,158                | 742,221    | 851,083                           | 4,817,632   | 3,051   | 22,645    | 1,353   | 16,789    |
| 1908 .....                     | 21,184                | 267,215    | 81,060                            | 727,367     | 31,982  | 153,007   | 5,621   | 68,869    |
| 1909 .....                     | 25,449                | 288,836    | 29,331                            | 383,390     | 10,396  | 84,845    | 37,662  | 380,371   |
| 1910 .....                     | 104,382               | 1,297,454  | 655,585                           | 10,473,425  | 14,501  | 126,950   | 106,000   | 964,600   |
| 1911 .....                     | 267,038               | 3,747,768  | 715,095                           | 10,372,661  | 20,313  | 284,859   | 113,533   | 1,237,204 |
| 1912 .....                     | 42,554                | 808,943    | 855,280                           | 12,420,488  | 18,932  | 117,497   | 35,213  | 495,116   |
| 1913 .....                     | 53,581                | 1,128,806  | 447,158                           | 6,348,352   | 2,768   | 48,639    | 15,395  | 255,399   |
| 1914 .....                     | 26,292                | 572,837    | 263,962                           | 4,242,089   | 7,626   | 91,948    | 1,629   | 21,546    |
| 1915 .....                     | 16,400                | 306,550    | 151,262                           | 2,496,872   | 489   | 5,508     | 1,292   | 19,118    |
| 1916 .....                     | 79,310                | 1,273,144  | 242,215                           | 3,670,421   | 4,780   | 58,808    | 12,246  | 180,361   |
| 1917 .....                     | 254,941               | 4,234,244  | 405,764                           | 6,612,040   | 12,470  | 165,245   | 21,533  | 331,596   |
| 1918 .....                     | 386,394               | 6,914,947  | 545,285                           | 11,044,883  | 25,933  | 321,005   | 49,723  | 783,062   |
| Total.....                     | 2,770,494             | 30,058,472 | 12,764,667                        | 103,127,565 | 1,272,207   | 5,311,605 | 1,417,141   | 6,685,597 |



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Government Land Grants, and by the Hudson's Bay Company.

| Calgary and Edmon-<br>ton Railway Com-<br>pany. |           | Canadian Northern<br>Railway Company. |            | Great Northwest Cen-<br>tral Railway Company. |           | Totals.    |             | Average<br>per<br>cent. |
|---|-----------|---------------------------------------|------------|---|-----------|------------|-------------|-------------------------|
| Acres.  | Amount.   | Acres.                                | Amount.    | Acres.  | Amount.   | Acres.     | Amount.     |                         |
|   | \$        |                                       | \$         |   | \$        |            | \$          |                         |
| 11,260  |           |                                       |            |   |           | 120,211    | 352,847     | 2 93                    |
| 11,035  |           |                                       |            |   |           | 68,668     | 207,856     | 3 02                    |
| 46,815  |           |                                       |            |   |           | 114,713    | 222,489     | 1 94                    |
| 10,553  |           |                                       |            |   |           | 198,016    | 361,338     | 3 34                    |
| 9,436   |           |                                       |            |   |           | 222,225    | 719,016     | 3 23                    |
| 15,481  |           |                                       |            |   |           | 448,623    | 1,431,774   | 3 18                    |
| 24,738  | 58,335    |                                       |            |   |           | 462,494    | 1,520,792   | 3 28                    |
| 46,653  | 128,256   |                                       |            |   |           | 648,379    | 2,125,146   | 3 27                    |
| 116,719   | 352,037   |                                       |            |   |           | 621,027    | 2,088,269   | 3 36                    |
| 323,494   | 1,033,396 |                                       |            |   |           | 2,201,795  | 7,746,958   | 3 56                    |
| 231,800   | 909,600   | 183,736                               | 631,503    | 128,435                                       | 522,490   | 4,229,011  | 14,651,757  | 3 46                    |
| 129,007   | 563,507   | 64,469                                | 313,575    | 41,858  | 177,081   | 1,267,187  | 5,564,240   | 4 39                    |
| 109,191   | 512,898   | 231,707                               | 1,221,469  | 17,593  | 103,564   | 990,005    | 5,046,572   | 5 09                    |
| 85,784  | 480,063   | 204,966                               | 1,014,351  | 20,003  | 137,503   | 1,642,684  | 9,871,241   | 6 01                    |
| 59,515  | 316,064   | 289,576                               | 1,711,109  | 4,023   | 41,470    | 1,277,759  | 7,697,930   | 6 02                    |
| 8,606   | 75,644    | 196,946                               | 1,746,504  | 1,294   | 13,855    | 346,693    | 3,052,461   | 8 80                    |
| 6,370   | 66,508    |                                       |            | 165   | 7,935     | 109,373    | 1,211,885   | 11 08                   |
| 18,323  | 182,926   | 285,428                               | 2,783,010  | 571   | 6,863     | 1,184,790  | 15,835,228  | 13 36                   |
| 11,820  | 116,231   | 277,414                               | 3,336,797  | 1,438   | 27,417    | 1,406,651  | 19,122,937  | 13 59                   |
| 10,853  | 154,424   | 365,926                               | 4,216,578  | 632   | 11,373    | 1,329,390  | 18,224,419  | 13 70                   |
| 4,155   | 44,212    | 182,491                               | 2,009,642  | 1,601   | 32,105    | 707,149    | 9,867,155   | 13 95                   |
| 19,575  | 460,129   | 182,491                               | 2,009,642  |   |           | 501,575    | 7,398,191   | 14 75                   |
| 23,042  | 444,918   |                                       |            | 316   | 6,965     | 192,801    | 3,279,031   | 17 01                   |
| 11,689  | 172,033   |                                       |            | 4,646   | 81,182    | 354,886    | 5,435,949   | 15 32                   |
| 33,821  | 573,875   | 17,796                                | 298,938    | 8,829   | 141,439   | 755,154    | 12,357,377  | 16 35                   |
| 53,335  | 815,628   | 39,546                                | 732,351    | 16,021  | 275,724   | 1,116,237  | 20,887,600  | 18 71                   |
| 1,433,070                                       | 7,484,784 | 2,522,492                             | 22,025,469 | 247,425                                       | 1,586,966 | 22,427,496 | 176,280,458 | 7 86                    |



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## PROGRESS IN THE NORTH.

## NORTHERN MANITOBA MINERAL BELT.

Of the 424 miles of the Hudson Bay railroad, 92 are still to be laid, but the part of the line now completed from The Pas serves in part the needs of the mineral belt of northern Manitoba. North of the railroad, drilling has been continued in the sulphide deposits, and ore has been crushed with good results; south of the railroad new discoveries of gold-bearing quartz are lately reported from the Hayes river. Government wagon roads now connect Sturgeon lake with lake Athapapuskow, and Herb lake with the railroad. Now that the output of the district is assured, hopes are turning to the erection of a smelter. Though proving the high grade of the ore, it is a handicap to ship, as is now the case, for a distance of 1,200 miles to the smelter at Trail, B.C.

## WATER-POWERS.

The water-power of northern Manitoba is derivable from several distinct systems. North of the Hudson Bay railroad there are the rapids of the Churchill e.g., at Granville fall; on the Nelson river, there is among other development sites, one where the river narrows to 200 yards at the Kettle Crossing. Where the Saskatchewan flows into lake Winnipeg at Grand Rapids is at present the best known undeveloped water-power of this region. There is a plan in hand to build a dam which can be used as a bridge for the extension of the railroad from Gypsumville on the Canadian Northern. Power (80,000 horse-power) can here be developed for the manufacture of the large body of pulpwood around Cedar lake, and for transmission to The Pas and the mineral belt.

The total horse-power from the above water systems is roughly put at three and a half millions—a potential energy available in time not only for the local needs of manufacturers and miners but also for the electrification of railroads and, above all, for the production of nitrogen. “The use of water-power on a large scale is the principal method of extracting nitrogen from the atmosphere and rendering it available for practical use.” The necessities of the war have now rendered the production of nitrates and nitric acid from this source familiar and economical in countries where the water-powers are trifling in comparison with those of the Dominion.

## COAL, GAS, ETC.

Further search has proved the existence of a large area of comparatively high-grade coal in the district adjoining Hudson Hope and Peace River in northern Alberta, and drills have tapped the flow of natural gas.

With the crying demand for such minerals as potash and platinum, the slightest clue to their discovery should be followed up. Slight traces of platinum occur in connection with the gold quartz recently taken from Herb lake, and there are well-founded hopes of potash discoveries in relation to the very thick beds of gypsum on the Peace river near Peace point.

## LAND FOR SOLDIER SETTLEMENT.

A large amount of land has been set aside for this purpose in Manitoba, Saskatchewan and Alberta, not only in the more populous districts, but in those specially alluring to the pioneer, e.g., in the Peace River district and in the High, Grand and Pouce Coupée prairies.



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## RAILROAD CONSTRUCTION.

Railroad building, owing to the steel shortage, has been held up generally, and the last 92 miles of the Hudson Bay railroad are still dormant. The Central Canada Railroad bridge at Peace River will be completed in the spring of 1919. In August, 1918, the Nelson river was bridged at Kettle rapids.

## PULPWOOD.

A large area of pulpwood lies around Cedar lake, and another, estimated at six million cords, on the line of the Hudson Bay railroad near The Pas. Fires in the past have ravaged other large areas, but the new growth is said to be nearly suitable for use. One of the many services which will be found for the air-plane after the war will be in the Forestry Service. Any sign of smoke or fire will be instantly detected by the flying ranger, and wireless hurry-calls will quickly assemble the help available.

## FISH.

Lesser Slave lake continues to ship its frozen white fish, and it is estimated that at least 100 cars of fish went out of Pas in the past season. Cheap fish is now a necessary antidote to the luxury of meat, and Canada's fish yield knows no limits.

## THE DOMINION ASTRONOMICAL OBSERVATORY.

During the fiscal year 1917-18, the 15-inch equatorial has been employed as formerly in the determination of the radial velocities of spectroscopic binary stars, with the view of securing the elements of their orbits; 350 plates have been secured on 136 nights, the exposures averaging much longer than in previous years, owing to the poor observing weather and fainter stars. Four orbits were completed during the year, and a number of others are under computation.

With the coelestat telescope and grating spectrograph, 243 plates were obtained. These include 1,200 photographs, each comprising from 7 to 9 simultaneous registrations of spectra from various parts of the sun's disc, with iodine absorption and electric arc spectra in some cases. The observations cover several important problems in solar and terrestrial spectroscopy. A supposed "cyclic variation" in the rate of the solar rotation has been explained quite definitely as due to changes in haze, as suggested in the last report. Measurements of the equatorial velocity of the sun's rotation from the limb spectra yield values several per cent smaller than simultaneous measurements of spectra from points midway between limbs and centre of the solar disc. Variations in spectroscopic measurements of the solar rotation have been found to synchronize with variations in solar radiation, both being affected by terrestrial, interplanetary or solar haze. The dust from the volcanoes in the West Indies in 1902 and from Katmai, Alaska, in 1912, produced marked lessening in both measurements at various points on the earth; and there is reason to suppose that Canadian crops were lessened at the same time.

With the 6-inch camera 146 plates were obtained with over 400 exposures, and light variations of spectroscopic binaries studied. Several fields of stars of well-established magnitudes have been selected and photographed to provide a means for comparing our photometric scale with those of other observatories.

The seismographs at the Observatory, together with a deformation instrument for detecting earth tides, have been in constant operation, and during the year, 104 earthquakes have been recorded. A wave-counter or undagraph has been maintained at Chebucto Head, Nova Scotia. Two other seismographs, one at the University of Saskatchewan, Saskatoon, and the other at Dalhousie University, Halifax, report regularly to the Observatory. The Halifax seismograph was of considerable assistance in the recent explosion investigation, giving authoritative evidence of the exact time the explosion occurred.



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## GRAVITY WORK WAS SUSPENDED FOR THE TIME BEING.

Observations with the meridian circle were obtained on 105 nights; they were devoted in part to determinations of clock error for longitude work and the purposes of the Time Service, and in part to a continuation of observations for right ascension and declination on a selected list of stars, to be incorporated in a star-catalogue. The list has been selected with a view to use in observations for latitude and longitude, as well as being a contribution in the general field of position astronomy. Three observers took part in the work. The printing chronograph was used throughout the year for the registration of transits.

Field observations for latitude and longitude were carried out at one station on the boundary between British Columbia and Alberta. Ottawa was the base for the longitude determination, the exchange of time-signals being along 3,000 miles of continuous wire.

The Time Service has been maintained as in previous years. There are now nine secondary master-clocks synchronized continuously from the Observatory; these in turn control 377 clocks and dials of various kinds in government offices. In addition, relays beating seconds are maintained in two offices in the city; time-signals are sent out by telegraph and telephone, and the time is recorded on the various seismographs at the Observatory.

Our wireless apparatus has been used from time to time for receipt of Arlington signals, and their comparison with our standard time. No longitude by wireless has been determined during the year.

## WATER POWERS.

As a result of the war and the necessity for preparation for the reconstruction period following it, departmental officials have been giving special attention to the investigation and administration of water-power resources, especially in Western Canada. Cheap power promises to be one of this country's greatest assets in the post bellum rivalry of nations for world trade. Canada's great fuel reserves, supported by her water-power resources, represent a sure source of cheap power, and guarantee her share in world trade, provided they are availed of to their maximum possible advantage.

One of the most important and far-reaching factors in England's quick recovery from the exhaustion of the Napoleonic Wars was the industrial impulse of the steam engine. The impetus to industry from cheap and unlimited electric energy, whether from coal or water-power, will, undoubtedly, prove as great a factor in the recovery of nations following the present world war. That nation which has a dependable source of power, capable of producing energy cheaper than other nations, will have a tremendous advantage.

Recognized experts on fuel and power matters generally, assure us that no country is more fortunate in respect of her fuel and power resources than is the Dominion of Canada.

The interdependence and inter-relation of all the varied fuel-power agencies available in Canada—water-power, coal, oil, and gas—necessitates some immediate and constructive organization for effecting their co-ordinate, concomitant development and use. The main function of such an agency should be the evolution of a national master fuel-power policy applicable to all parts of the Dominion, and which will realize the maximum advantageous use of every fuel-power element.

Probably the most efficient, effective, inexpensive, and immediate method of achieving such result would be the formation of a fuel-power board consisting of the government officials from the different federal departments who have for years been giving special attention to particular phases of the power problems of the Dominion,



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and who have, as a direct result amassed in their respective offices a great deal of valuable data concerning the present use and possibility of further use of the fuel and power resources.

In connection with water-power problems throughout the country the water-power officials of the department have assisted and co-operated effectively with the International Joint Commission, the Conservation Commission, the Honorary Advisory Council for Scientific and Industrial Research, the Nova Scotia Water Power Commission, various provincial departments, and also the Dominion Bureau of Statistics. Notwithstanding the very large percentage of officials of the Dominion Water Power Branch serving overseas, essential work has been maintained without undue loss of efficiency or reduction in effective results. It has been readily acknowledged that essential data covering water-power sites feasible and economical of development within a reasonable time should be obtained and made generally available. There never was a time in the history of Canada when it was more important that the obtaining of such data should be made prompt and certain.

## IRRIGATION.

In consequence of the campaign for increased production, the settlers in southern Saskatchewan and Alberta have been directing most of their energies towards dry-farming operations, and have paid very little attention to the construction of irrigation works or irrigated farming, as the latter requires more expert labour than the former.

This action has no doubt to a certain extent been justified by the splendid crop yields obtained in the past two or three years, without the aid of irrigation. Time will, however, prove that the practice of irrigation is the only means by which the settlers in this portion of the west can in all years be assured of good returns for their labour, as the productivity of the soil is only limited by the amount of moisture that can be stored in it.

Our irrigation engineers have been instructed to co-operate with the settlers by giving advice regarding the best methods of irrigating, the most suitable crops to grow, having regard to the different soils, and in quite a number of cases they have laid out comprehensive drainage systems to take care of the excess irrigation water, and in this way avoid certain areas becoming water logged or alkali.

Hydrometric surveys (stream measurements) have been continued as in former years, as their value largely depends upon securing regular records covering a period of years. A few changes have been made in the location of gauging stations. Some of the older ones at which we have obtained records for a number of years having been dropped, and a few new stations, where actually required, added.

## WATER SUPPLY INVESTIGATIONS.

In portions of southern Alberta and Saskatchewan great difficulty has been experienced by settlers in securing domestic water supplies. The situation has become more critical as the country has become more closely settled.

Last year, as a result of action taken by the Lethbridge Board of Trade, a "water conference" was held at Lethbridge, the result of which has been to secure closer co-operation between the Dominion and Provincial Governments of Alberta and Saskatchewan, in investigating all possible water supplies in the districts directly affected. The irrigation branch are investigating all cancelled stock-watering reserves with a view to the continued reservation of any of them that may be useful in connection with domestic water supplies.

During the past year the engineers of the irrigation branch have investigated a large number of wells and other sources of water supply, in order to determine their



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nature, the quantity of water available, and their permanence. These investigations will be continued, and it is expected that, in time, the information gained will help in solving the present difficulty.

The Provincial Governments have been co-operating by constructing, wherever possible, small dugouts or reservoirs for the storage of waters usually collected during the early spring run-off. A large number of these have been inspected by irrigation engineers during the past year, and licenses have been issued by this department covering the storage of water in the same, and its use by the public.

#### IRRIGATION SURVEYS.

Owing to the high cost of material and labour, very little construction work is being undertaken, and it has not been considered necessary or in the interests of economy to continue any large survey parties in the field. A large number of inspections, however, have been made in connection with industrial water supply schemes, and a few investigations in connection with small drainage schemes.

W. W. CORY,  
*Deputy Minister.*



PART I.

DOMINION LANDS







DOMINION LANDS.

REPORT OF THE COMMISSIONER, J. W. GREENWAY.

Applications for Patent—

|  |        |        |
|--|--------|--------|
| Number examined.. . . .                                  | 40,572 | 45,752 |
| New applications.. . . .                                 | 20,281 | 20,923 |
| Applications accepted and notifications sent out.. . . . | 18,163 | 19,832 |

REPORT OF THE CHIEF INSPECTOR OF DOMINION LANDS AGENCIES,  
H. G. CUTTLE.

During the year ending March 31, 1918, I held many investigations in connection with Dominion Lands, six of which were under oath, authorized by Order in Council, and thirty-two of a less serious nature. I have on hand, at the present time, eleven investigations to dispose of, three of which are under oath, and eight where sworn statements will have to be taken.

I visited all the Land Offices in Manitoba, Saskatchewan, and Alberta during the year, and found everything very satisfactory, and the work well kept up to date. During the past year the Land Offices were in a better position to handle the seed grain and relief collections, and there was not nearly the congestion as there was in former years.

On the 1st day of August, I opened up my central office for the collection of seed grain and relief indebtedness at Moosejaw. My staff at that point was augmented by employees of the department from the different Land Offices throughout the West, and I engaged a few other parties to assist in the work for a short period.

The collections this year were not as large as the year previous, as the crops in a good many districts were poor. From April 1, 1917, to March 31, 1918, the receipts for seed grain and relief indebtedness amount to \$2,503,037.74, and the total collections of seed grain and relief indebtedness to March 31, 1918, amount to \$7,894,088.51.

For the summer months I made out new lists of indebtedness, and furnished each homestead inspector with one covering their homestead inspection district. Under their instructions, they are supposed to collect as much seed grain indebtedness as possible while on their usual inspection work without extra cost to the department.

I received several complicated investigations from Head Office in connection with seed grain and relief, and disposed of one hundred and thirty-five. I have on hand at the present time, thirty-four.

During the latter part of the year, a general reorganization of the western offices took place, and the following agencies were closed: Red Deer, High Prairie, Weyburn, Yorkton, Medicine Hat, Humboldt, Maple Creek.

The following sub-agencies were also closed: Estevan, Hanley, Willow Bunch, Castor, Olds, Vulcan, Canora, Rosthern, Wilkie, Grassy Lake, Sedgewick, Sheho, Unity, Biggar, Lacombe, Trochu, Punnichy, Blaine Lake, Brooks, MacLeod, Vegreville.



Red Deer was attached to Calgary. Yorktown Agency was partly attached to Saskatoon and Moosejaw, Humboldt partly attached to Prince Albert and Saskatoon, High Prairie to Peace River, Medicine Hat to Lethbridge, Maple Creek to Swift Current, and Weyburn to Moosejaw.

There was also a reduction in the number of homestead inspectors in the West, and a general rearrangement of the staffs of the different offices affected. In some cases the services of employees were dispensed with, while others were transferred to the busy offices.

REPORT OF THE INSPECTOR, O. NEFF, OF DOMINION LANDS AGENCIES, BRANDON.

DOMINION LANDS AGENCIES.—Manitoba and Saskatchewan.—Principal Transactions for the Departmental Year ending March 31, 1918.

| Agencies.                            | Home-<br>stead<br>entries<br>granted. | Land Sales.                              |                       |                                    | S. A.<br>Scrip. | Appli-<br>cation<br>for<br>Patent<br>re-<br>ceived. | Land<br>Entries<br>can-<br>celled. | Permits Issued. |       |
|--------------------------------------|---------------------------------------|--|-----------------------|------------------------------------|-----------------|---|------------------------------------|-----------------|-------|
|                                      |                                       | Ordin-<br>ary<br>and<br>School<br>Lands. | Pre-<br>emp-<br>tions | Pur-<br>chased<br>Home-<br>steads. |                 |   |                                    | Timber          | Hay.  |
| Battleford.....                      | 353                                   | 57                                       | 24                    | 10                                 | .....           | 811   | 368                                | 169             | 879   |
| Dauphin.....                         | 725                                   | 36                                       | .....                 | .....                              | .....           | 322   | 393                                | 474             | 469   |
| Humboldt (closed Mar. 8)             | 279                                   | 29                                       | .....                 | .....                              | 4               | 376   | 138                                | 85              | 568   |
| Moose Jaw.....                       | 421                                   | 25                                       | 131                   | 35                                 | .....           | 2,686   | 462                                | 5               | 1,044 |
| Maple Creek (closed Mar.<br>21)..... | 300                                   | 5  | 161                   | 27                                 | .....           | 2,952   | 267                                | 42              | 643   |
| Prince Albert.....                   | 556                                   | 62                                       | .....                 | 2                                  | 1               | 625   | 322                                | 555             | 674   |
| Saskatoon.....                       | 226                                   | 43                                       | 70                    | 25                                 | .....           | 1,600   | 234                                | 23              | 647   |
| Swift Current.....                   | 320                                   | 10                                       | 128                   | 18                                 | .....           | 2,383   | 319                                | 4               | 514   |
| The Pas.....                         | .....                                 | 7  | .....                 | .....                              | .....           | .....   | .....                              | 38              | 17    |
| Winnipeg.....                        | 868                                   | 80                                       | .....                 | .....                              | .....           | 666   | 582                                | .....           | ..... |
| Weyburn (closed Mar. 14)...          | 137                                   | 7  | 55                    | 11                                 | .....           | 441   | 154                                | 3               | 517   |
| Yorkton (closed Mar. 7)...           | 138                                   | 53                                       | .....                 | .....                              | .....           | 384   | 87                                 | 24              | 316   |
| Total.....                           | 4,323                                 | 414                                      | 569                   | 128                                | 5               | 13,246  | 3,326                              | 1,422           | 6,288 |
| Compared with 1916-17...             | 6,714                                 | 359                                      | 1,010                 | 157                                | 1               | 13,351  | 4,571                              | 1,367           | 6,235 |
| Compared with 1915-16...             | 10,212                                | 378                                      | 1,699                 | 219                                | .....           | 11,819  | 7,365                              | 1,907           | 6,768 |



## SESSIONAL PAPER No. 25

DOMINION LANDS SUB-AGENCIES.—Manitoba and Saskatchewan.—Work performed during the Departmental Year ending March 31, 1918.

| Name.                     | Sub-agency.                | Applications for— |                                    |                        |         |                  |                         |       |
|---------------------------|----------------------------|-------------------|------------------------------------|------------------------|---------|------------------|-------------------------|-------|
|                           |                            | Home-<br>steads.  | Pur-<br>chased<br>Home-<br>steads. | Pre-<br>emp-<br>tions. | Patent. | In-<br>spectors. | Timber<br>Per-<br>mits. | Hay.  |
| S. Einarsson.....         | Arborg.....                | 13                |                                    |                        | 17      | 9                |                         |       |
| T. G. Ross.....           | Assiniboia.....            | 114               | 10                                 | 38                     | 606     | 197              | 1                       | 160   |
| J. Roberts.....           | Blaine Lake.....           | 36                | 2                                  |                        | 67      | 20               | 37                      | 52    |
| H. P. Turner.....         | Biggar.....                | 30                |                                    | 8                      | 216     | 53               | 79                      | 66    |
| Mrs. M. Bucke.....        | Brandon.....               | 84                |                                    |                        | 28      | 5                |                         | 3     |
| A. H. Bomford.....        | Canora.....                | 17                |                                    |                        | 89      | 13               | 1                       | 12    |
| J. Cusack.....            | Empress.....               | 34                |                                    | 15                     | 513     | 68               | 3                       | 18    |
| J. Templeman.....         | Estevan.....               | 15                | 1                                  | 1                      | 23      | 10               | 1                       | 50    |
| Wm. Banks.....            | Gull Lake.....             | 14                | 3                                  | 7                      | 299     | 45               |                         | 49    |
| J. Wiebe.....             | Herbert.....               | 10                | 1                                  | 5                      | 144     | 27               | 2                       | 63    |
| Geo. Gregg.....           | Hanley.....                | 6                 |                                    | 1                      | 65      | 13               |                         | 6     |
| A. Read.....              | Kerrobert.....             | 42                | 2                                  | 21                     | 162     | 44               | 1                       | 26    |
| J. H. Elliott.....        | Kindersley.....            | 34                | 3                                  | 5                      | 218     | 39               |                         | 17    |
| W. H. Holland.....        | Lloydminster..             | 31                |                                    |                        | 64      | 22               | 18                      | 22    |
| J. T. McCordie.....       | Meadow Lake..              | 16                |                                    |                        | 15      | 8                | 17                      | 61    |
| A. Featherstonhaugh.....  | Macklin.....               | 15                | 1                                  |                        | 124     | 21               |                         |       |
| W. Young.....             | Melfort.....               | 73                |                                    |                        | 125     | 43               | 22                      | 35    |
| W. Deans.....             | North Battle-<br>ford..... | 108               | 1                                  |                        | 133     | 44               | 26                      | 127   |
| J. J. McGurran.....       | Nokomis.....               | 50                |                                    | 3                      | 39      | 24               |                         | 17    |
| W. Giroux.....            | Ponteix.....               | 138               | 3                                  | 84                     | 577     | 205              |                         | 31    |
| E. C. Medland.....        | Punnichy.....              | 10                |                                    |                        | 22      | 8                | 1                       | 27    |
| D. McMurphy.....          | Preeceville.....           | 49                |                                    |                        | 118     | 41               | 15                      | 34    |
| V. W. Johnson.....        | Rosburn.....               | 12                |                                    |                        | 5       | 5                |                         | 1     |
| E. St. G. Hodson.....     | Rosthern.....              | 4                 |                                    |                        | 36      |                  | 1                       | 13    |
| J. H. Canham.....         | Sprague.....               | 31                |                                    |                        | 3       | 10               | 6                       | 5     |
| S. G. Maddock.....        | Shellbrooke.....           | 64                |                                    |                        | 115     | 32               | 32                      | 37    |
| B. T. Tucker.....         | St. Rose du Lac            | 176               |                                    |                        | 31      | 26               | 34                      | 50    |
| A. E. Reid.....           | Swan River.....            | 51                |                                    |                        | 37      | 33               | 50                      | 11    |
| W. M. Spencer.....        | Sheho.....                 | 4                 |                                    |                        | 41      | 4                |                         | 32    |
| J. V. Ablott.....         | Shaunavon.....             | 82                | 16                                 | 30                     | 673     | 195              |                         | 4     |
| D. Hughes.....            | Turtleford.....            | 42                |                                    |                        | 146     | 25               | 12                      | 29    |
| Wm. Buxton.....           | Tisdale.....               | 147               |                                    |                        | 132     | 45               | 25                      | 26    |
| S. Humphreys.....         | Unity.....                 | 39                | 2                                  | 15                     | 153     | 40               | 2                       | 85    |
| J. J. Gunn.....           | Wilkie.....                | 10                |                                    | 1                      | 25      | 8                |                         | 32    |
| Miss M. Langstaff.....    | Wadena.....                | 72                |                                    |                        | 108     | 39               | 3                       | 30    |
| S. Lytwyn.....            | Winnipegosis....           | 42                |                                    |                        |         | 1                | 3                       | 35    |
| P. Lapointe.....          | Willow Bunch...            | 56                | 10                                 | 20                     | 319     | 98               | 2                       | 77    |
| F. N. Rowe.....           | Wynyard.....               | 23                |                                    |                        | 64      | 16               |                         | 34    |
| Totals.....               |                            | 1,794             | 55                                 | 254                    | 5,552   | 1,548            | 395                     | 1,377 |
| Compared with 1916-1917.. |                            | 2,364             | 72                                 | 375                    | 5,850   | 2,175            | 418                     | 1,406 |
| Compared with 1915-1916.. |                            | 3,986             | 82                                 | 630                    | 5,314   | 2,631            | 768                     | 1,635 |



REPORT OF INSPECTOR OF DOMINION LANDS AGENCIES,  
J. W. MARTIN, CALGARY, ALTA.

DOMINION LANDS AGENCIES.—Alberta and British Columbia.—Principal Transactions  
for the Departmental Year ending March 31, 1918.

| Agencies.                | Home-<br>stead<br>Entries<br>granted | Land Sales.                        |                        |                                    | S. A.<br>Scrip | Appli-<br>cations<br>for<br>Patent<br>received | Land<br>Entries<br>canc'led | Permits Issued. |       |
|--------------------------|--------------------------------------|------------------------------------|------------------------|------------------------------------|----------------|--|-----------------------------|-----------------|-------|
|                          |                                      | Ordin'y<br>and<br>School<br>Lands. | Pre-<br>emp-<br>tions. | Pur-<br>chased<br>Home-<br>steads. |                |  |                             | Timber          | Hay.  |
| Calgary.....             | 292                                  | 30                                 | 71                     | 26                                 |                | 2,548  | 338                         | 265             | 603   |
| Edmonton.....            | 1,535                                | 150                                |                        | 1                                  |                | 1,646  | 1,399                       | 1,638           | 1,039 |
| Grande Prairie.....      | 886                                  | 32                                 |                        |                                    |                | 380  | 269                         | 365             | 347   |
| High Prairie (closed)... | 116                                  | 7                                  |                        |                                    |                | 18   | 41                          | 35              | 53    |
| Kamloops.....            | 127                                  | 34                                 |                        |                                    |                | 82   | 34                          | 360             | 21    |
| Lethbridge.....          | 91                                   | 36                                 | 18                     |                                    |                | 473  | 103                         | 190             | 58    |
| Medicine Hat (closed)... | 2,671                                | 11                                 | 125                    | 29                                 |                | 1,433  | 384                         | 147             | 251   |
| New Westminster.....     | 33                                   | 4                                  |                        |                                    |                | 22   | 32                          |                 |       |
| Peace River.....         | 451                                  | 24                                 |                        |                                    |                | 337  | 140                         | 356             | 176   |
| Revelstoke.....          | 18                                   | 3                                  |                        |                                    |                | 19   | 26                          | 86              |       |
| Red Deer (closed).....   | 166                                  | 16                                 | 17                     | 17                                 |                | 523  | 154                         | 129             | 440   |
| Totals.....              | 6,386                                | 347                                | 231                    | 74                                 |                | 7,481  | 2,920                       | 3,571           | 2,988 |
| Total 1916-17...         | 4,815                                | 312                                | 457                    | 110                                |                | 8,053  | 3,871                       | 3,604           | 3,076 |



## SESSIONAL PAPER No. 25

DOMINION LANDS SUB-AGENCIES.—Alberta and British Columbia.—Work performed during the Departmental Year ending March 31, 1918.

| Name of Sub-Agents.  | Sub-Agencies.       | Home-steads. | Purchased Home-steads. | Pre-emp-tions. | Applications for |             | Timber Per-mits. | Hay Per-mits. |
|----------------------|---------------------|--------------|------------------------|----------------|------------------|-------------|------------------|---------------|
|                      |                     |              |                        |                | Patents          | Inspection. |                  |               |
| Spicer, S. E.....    | Alsask.....         | 33           | 3                      | 15             | 516              | 87          |                  | 41            |
| Rennison, G.....     | Athabaska.....      | 91           |                        |                | 114              | 54          | 27               | 91            |
| Ostigny, N.....      | Bonnyville.....     | 74           |                        |                | 36               | 11          | 21               | 100           |
| Binns, H. P.....     | Brooks.....         | 6            | 1                      |                | 109              | 15          |                  | 1             |
| Mercer, R. M.....    | Castor.....         | 22           | 6                      | 5              | 123              | 28          |                  | 22            |
| Glover, Frank.....   | Edson.....          | 21           |                        |                | 63               | 14          | 6                | 9             |
| Brown, Alex.....     | Entwistle.....      | 23           |                        |                | 60               | 12          | 20               | 33            |
| Cusack, J.....       | Empress.....        | 71           | 7                      | 39             | 354              | 142         |                  | 20            |
| McGowan, J.....      | Frog Lake.....      | 15           |                        |                | 36               | 14          | 15               | 10            |
| Potts, Cecil.....    | Ft. McMurray.....   | 2            |                        |                | 8                | 1           |                  |               |
| Barber, J. C.....    | Ft. St. John.....   | 10           |                        |                | 9                | 3           |                  | 3             |
| Morden, A. L.....    | Ft. Vermilion.....  | 13           |                        |                |                  |             | 6                | 39            |
| Requier, E. E.....   | Donnelly.....       | 66           |                        |                | 82               | 21          | 101              | 24            |
| Gody, J. G.....      | Golden.....         | 14           |                        |                | 8                | 4           | 25               |               |
| Snowdon, T.....      | Grassy Lake.....    | 10           | 1                      | 3              | 149              | 26          |                  |               |
| Trenaman, J. C.....  | Hanna.....          | 28           | 7                      | 10             | 399              | 71          |                  | 60            |
| Cameron, A. J.....   | Lacombe.....        | 7            |                        |                | 14               | 5           | 2                | 7             |
| Prince, A.....       | Lac la Biche.....   | 45           |                        |                | 38               | 22          | 18               | 72            |
| Holland, W. H.....   | Lloydminster.....   | 10           |                        |                | 38               | 11          | 4                | 12            |
| Whitaker, J.....     | Mossidae.....       | 21           |                        |                | 51               | 7           | 10               | 12            |
| Rhodes, C. C.....    | Macleod.....        | 6            |                        |                | 40               | 11          | 6                | 3             |
| Craig, R. A.....     | Olds.....           | 7            |                        |                | 23               | 3           |                  | 3             |
| Rogers, M. J.....    | Orion.....          | 8            | 1                      | 6              | 106              | 13          |                  | 1             |
| McDonald, S. A.....  | Pine Creek.....     | 18           |                        |                | 54               | 21          | 70               |               |
| Fleming, W. S.....   | Provost.....        | 53           | 9                      | 15             | 240              | 66          | 1                | 40            |
| Saloway, G.....      | Pouce Coupé.....    | 72           |                        |                | 103              | 40          | 84               | 34            |
| Hankinson, R. T..... | Ry. Mt. House....   | 34           |                        |                | 78               | 33          | 29               | 8             |
| Lacey, J. E.....     | Salmon River.....   | 13           |                        |                | 11               | 3           |                  |               |
| McDonald, J. S.....  | Sedgewick.....      | 25           |                        |                | 58               | 26          |                  | 5             |
| Grey, W. B.....      | Stettler.....       | 21           | 1                      | 3              | 118              | 29          |                  | 25            |
| Fildes, J. W.....    | Spirit River.....   | 106          |                        |                | 49               | 70          | 67               | 37            |
| Racicot, B.....      | St. Paul de Métis.. | 36           |                        |                | 97               | 30          | 36               | 52            |
| LaPlante, J. R.....  | St. Lina.....       | 40           |                        |                | 79               | 38          | 18               | 13            |
| Garrick, W. H.S..... | Trochu.....         | 3            | 3                      |                | 30               | 8           |                  |               |
| Wilson, F.....       | Vegreville.....     | 9            |                        |                | 25               | 12          | 10               | 17            |
| Flood, A. J.....     | Vulcan.....         | 2            |                        |                | 41               | 4           |                  | 7             |
| Mace, Job.....       | Vermilion.....      | 32           | 1                      |                | 93               | 31          | 9                | 26            |
| Todd, H. E.....      | Wetaskiwin.....     | 33           |                        |                | 15               | 22          | 62               | 10            |
| Torgerson, J.....    | Whitecourt.....     | 12           |                        |                | 13               | 8           | 7                | 2             |
| McLeod, W. H.....    | Wainwright.....     | 50           | 1                      |                | 85               | 48          |                  | 16            |
| Laight, E. V.....    | Wabamun.....        | 6            |                        |                | 25               | 7           | 1                | 7             |
| Hughson, W. S.....   | Whitford.....       | 1            |                        |                | 44               | 6           | 57               | 1             |
| Alton, B. C.....     | Westlock.....       | 57           |                        |                | 62               | 24          | 72               | 52            |
| Rayment, M.....      | Youngstown.....     | 42           | 3                      | 13             | 668              | 139         |                  | 83            |
| Wenham, M.....       | Yeoford.....        | 15           |                        |                | 27               | 14          | 15               | 11            |
| Total.....           |                     | 1,283        | 44                     | 109            | 4,391            | 1,254       | 799              | 1,009         |



STATEMENT showing Principal Work performed by Homestead Inspectors in Alberta and British Columbia for Departmental Year ending March 31, 1918.

| Name of Homestead Inspector. | Headquarters.        | Land<br>Inspections<br>made. | Applications<br>for<br>Patent taken. |
|------------------------------|----------------------|------------------------------|--------------------------------------|
| Benzie, J. M.....            | Kamloops.....        | 686                          | 16                                   |
| Blackwell, A. J.....         | Edmonton.....        | 18                           | 1                                    |
| Creighton, H. E.....         | Red Deer.....        | 198                          | 104                                  |
| Cunningham, T. J.....        | Edmonton.....        | 316                          | 54                                   |
| Cook, H.....                 | Revelstoke.....      | 149                          | 6                                    |
| Doze, I. S.....              | Edmonton.....        | 426                          | 9                                    |
| Fletcher, J.....             | Grande Prairie.....  | 182                          |                                      |
| Fleming, G. W.....           | Calgary.....         | 194                          | 27                                   |
| Gerow, H. S.....             | Medicine Hat.....    | 31                           |                                      |
| Griffin, A. H.....           | Edmonton.....        | 419                          | 28                                   |
| Grasse, P. L.....            | Red Deer.....        | 124                          | 6                                    |
| Hagen, S. C.....             | Edmonton.....        | 460                          | 48                                   |
| Huntley, J. R.....           | Medicine Hat.....    | 134                          | 1                                    |
| Horne, J. A.....             | Edmonton.....        | 124                          | 3                                    |
| Kembrey, R. A.....           | Clagary.....         | 226                          | 94                                   |
| Key, A. E.....               | High Prairie.....    | 62                           | 2                                    |
| Letson, W. A.....            | Edmonton.....        | 120                          | 24                                   |
| Magee, W. D.....             | New Westminster..... | 119                          |                                      |
| McMullen, J. E.....          | Peace River.....     | 189                          | 13                                   |
| McCowan, H. S.....           | Edmonton.....        | 366                          | 34                                   |
| Scott, Hugh.....             | Lethbridge.....      | 187                          | 61                                   |
| Switzer, Wm.....             | Medicine Hat.....    | 147                          | 7                                    |
| Tempany, Wm.....             | Calgary.....         | 138                          | 7                                    |
| Woodlock, P. A.....          | Calgary.....         | 249                          | 47                                   |
| Wynne, A. E.....             | Edmonton.....        | 152                          | 22                                   |
| Total.....                   |                      | 5,416                        | 614                                  |
| Total 1916-17.....           |                      | 5,337                        | 748                                  |

Some of the above Homestead Inspectors have, in addition to their regular duties, devoted a great deal of their time to Seed Grain and Soldiers Settlement Work.



SESSIONAL PAPER No. 25

# REPORT OF THE AGENT OF DOMINION LANDS, L. P. O. NOEL, BATTLEFORD, SASK.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                               | Number. | Revenue.    | Total.       |
|--|---------|-------------|--------------|
| Homestead entries.. . . . .                  | 353     | \$ 3,610 00 |              |
| Pre-emption entries.. . . . .                | 22      | 240 00      |              |
| Purchased homestead entries.. . . . .        | 10      | 100 00      |              |
| Improvements.. . . . .                       | 55      | 2,106 80    |              |
| Land sales.. . . . .                         | 55      | 3,648 18    |              |
| Pre-emption payments .. . . . .              | 266     | 82,194 18   |              |
| Purchased homestead payments.. . . . .       | 83      | 13,977 20   |              |
| Searches.. . . . .                           | 333     | 83 25       |              |
| Applications for patent.. . . . .            | 811     | .....       |              |
| “ “ cancellation.. . . . .                   | 171     | .....       |              |
| Entries cancelled.. . . . .                  | 334     | .....       |              |
| Sundries.. . . . .                           | 5       | 664 45      |              |
| Total.. . . . .                              |         |             | \$106,624 06 |
| Timber and Grazing Branch—                   |         |             |              |
| Timber permits.. . . . .                     | 167     | \$ 381 25   |              |
| “ “ excess payments.. . . . .                | 39      | 149 18      |              |
| “ seizures.. . . . .                         | 5       | 151 05      |              |
| Hay permits.. . . . .                        | 388     | 1,014 20    |              |
| Grazing rental, cash.. . . . .               | 384     | 1,449 68    |              |
| Hay permits, excess payments.. . . . .       | 1       | 5 10        |              |
| Total.. . . . .                              |         |             | 3,150 46     |
| Forestry Branch—                             |         |             |              |
| Permit fees and rentals.. . . . .            | 231     | \$234 20    |              |
| “ “ “ excess payments.. . . . .              | 2       | 6 00        |              |
| Grazing rent, etc.. . . . .                  | 86      | 796 15      |              |
| Camping.. . . . .                            | .....   | 0 25        |              |
| Hay dues, etc.. . . . .                      | 24      | 96 35       |              |
| Total.. . . . .                              |         |             | 1,132 95     |
| Mining Lands and Yukon Branch—               |         |             |              |
| Mining fees.. . . . .                        | 1       | \$ 2 50     |              |
| Assessment payments.. . . . .                | 1       | 11 32       |              |
| Total.. . . . .                              |         |             | 13 82        |
| School Lands Branch—                         |         |             |              |
| General sales.. . . . .                      | 1       | \$ 14 00    |              |
| Timber permits.. . . . .                     | 1       | 2 25        |              |
| “ “ excess payments.. . . . .                | 1       | 3 00        |              |
| Hay permits.. . . . .                        | 626     | 1,157 40    |              |
| “ “ excess payments .. . . . .               | 6       | 7 80        |              |
| Grazing rentals.. . . . .                    | 293     | 3,700 13    |              |
| Cultivation permits.. . . . .                | 2       | 150 00      |              |
| Total.. . . . .                              |         |             | 5,034 58     |
| Miscellaneous—                               |         |             |              |
| Seed grain and provision payments... . . . . | 264     | \$21,587 65 |              |
| Sundries.. . . . .                           | 7       | 253 70      |              |
| Total.. . . . .                              |         |             | 21,841 35    |
| Grand total.. . . . .                        |         |             | \$137,797 22 |



9 GEORGE V, A. 1919

# REPORT OF THE AGENT OF DOMINION LANDS, W. E. TALBOT, CALGARY, ALTA.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                           | Number. | Revenue.     | Total.       |
|--|---------|--------------|--------------|
| Homestead fees.. . . . .                 | 456     | \$ 4,560 00  |              |
| Pre-emption fees.. . . . .               | 87      | 870 00       |              |
| Purchased homesteads.. . . . .           | 42      | 420 00       |              |
| Improvements.. . . . .                   | 199     | 9,826 58     |              |
| Land sales.. . . . .                     | 46      | 4,775 41     |              |
| Pre-emption payments.. . . . .           | 2,045   | 572,278 54   |              |
| Purchased homestead payments .. . . .    | 314     | 48,877 15    |              |
| Searches, etc.. . . . .                  | 450     | 110 00       |              |
| Applications for patent.. . . . .        | 3,071   | .....        |              |
| “ cancellation.. . . . .                 | 558     | .....        |              |
| Entries cancelled.. . . . .              | 491     | .....        |              |
| Total.. . . . .                          |         |              | \$641,717 68 |
| Seed Grain Branch—                       |         |              |              |
| Seed grain and provision payments.. . .  | 1,845   | \$217,301 00 |              |
| Total.. . . . .                          |         |              | 217,301 00   |
| Timber and Grazing Branch—               |         |              |              |
| Bonus.. . . . .                          | 1       | \$1,100 00   |              |
| Ground rent.. . . . .                    | 36      | 2,439 68     |              |
| Royalty on sales.. . . . .               | 39      | 9,833 07     |              |
| Timber permits.. . . . .                 | 269     | 6,832 23     |              |
| “ seizures.. . . . .                     | 13      | 474 76       |              |
| Hay permits.. . . . .                    | 113     | 399 38       |              |
| Grazing rentals.. . . . .                | 627     | 6,581 92     |              |
| Sundries.. . . . .                       | 8       | 73 99        |              |
| Total.. . . . .                          |         |              | 27,735 03    |
| Forestry Branch—                         |         |              |              |
| Permit fees and rental.. . . . .         | 148     | \$10,711 46  |              |
| Seizures.. . . . .                       | 4       | 44 79        |              |
| Grazing rent.. . . . .                   | 67      | 2,511 26     |              |
| Hay dues.. . . . .                       | 19      | 86 15        |              |
| Total.. . . . .                          |         |              | 13,353 66    |
| Irrigation Branch—                       |         |              |              |
| Sales.. . . . .                          | 7       | \$541 32     |              |
| Reservoir rental.. . . . .               | 1       | 119 25       |              |
| Total.. . . . .                          |         |              | 660 57       |
| Mining Lands and Yukon Branch—           |         |              |              |
| Mining fees (quartz and placer).. . . .  | 97      | \$ 300 50    |              |
| Rental (coal).. . . . .                  | 187     | 14,497 53    |              |
| Royalty.. . . . .                        | 143     | 14,311 45    |              |
| Petroleum and natural gas.. . . . .      | 92      | 4,659 51     |              |
| Domestic coal permits .. . . . .         | 6       | 30 00        |              |
| Gravel permits.. . . . .                 | 4       | 2 00         |              |
| Total.. . . . .                          |         |              | 33,800 99    |
| School Lands Branch—                     |         |              |              |
| General sales.. . . . .                  | 11      | \$,4,337 06  |              |
| Timber permits.. . . . .                 | 3       | 11 75        |              |
| Hay permits.. . . . .                    | 912     | 2,217 30     |              |
| Grazing rentals.. . . . .                | 642     | 10,143 89    |              |
| Coal rentals.. . . . .                   | 29      | 1,968 20     |              |
| “ royalty.. . . . .                      | 6       | 271 30       |              |
| Petroleum and natural gas payments.. . . | 5       | 518 33       |              |
| Total.. . . . .                          |         |              | 19,467 83    |
| Grand total.. . . . .                    |         |              | \$954,036 76 |



## SESSIONAL PAPER No. 25

REPORT OF THE AGENT OF DOMINION LANDS, E. W. WIDMEYER,  
DAUPHIN, MAN.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                  | Number. | Revenue.    | Total.      |
|---------------------------------|---------|-------------|-------------|
| Homestead fees. . . . .         | 725     | \$ 7,250 00 |             |
| Improvements.. . . .            | 73      | 2,351 30    |             |
| Land sales.. . . .              | 24      | 1,921 39    |             |
| Searches.. . . .                | 830     | 207 50      |             |
| Applications for patent.. . . . | 322     | .....       |             |
| “ “ inspection. . . . .         | 241     | .....       |             |
| Entries cancelled.. . . .       | 393     | .....       |             |
| Total.. . . .                   |         |             | \$11,730 19 |
| Timber and Grazing Branch—      |         |             |             |
| Timber permits. . . . .         | 471     | \$ 2,086 61 |             |
| “ seizures . . . . .            | 24      | 326 90      |             |
| Hay permits.. . . .             | 241     | 555 65      |             |
| Grazing rentals. . . . .        | 51      | 221 55      |             |
| Total.. . . .                   |         |             | 3,190 71    |
| Forestry Branch—                |         |             |             |
| Timber permits. . . . .         | 1,712   | \$13,972 22 |             |
| Permit fees and rentals.. . . . | 23      | 135 00      |             |
| Seizures.. . . .                | 79      | 909 48      |             |
| Grazing rentals.. . . .         | 28      | 431 25      |             |
| Hay dues.. . . .                | 251     | 597 00      |             |
| Total.. . . .                   |         |             | 16,044 95   |
| School Lands Branch—            |         |             |             |
| General sales.. . . .           | 12      | \$ 3,363 75 |             |
| Timber permits.. . . .          | 3       | 28 25       |             |
| Hay permits.. . . .             | 228     | 375 70      |             |
| Grazing rentals.. . . .         | 43      | 566 30      |             |
| Seizures.. . . .                | 2       | 183 25      |             |
| Total.. . . .                   |         |             | 4,517 25    |
| Seed Grain Branch—              |         |             |             |
| Seed grain payments.. . . .     | 46      | \$ 2,014 33 |             |
| Total.. . . .                   |         |             | 2,014 33    |
| Grand total.. . . .             |         |             | \$37,497 43 |



REPORT OF THE AGENT OF DOMINION LANDS, A. NORQUAY, EDMONTON, ALTA.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                                | Number. | Revenue.    | Total.       |
|---|---------|-------------|--------------|
| Homestead fees.. . . . .                      | 1,535   | \$15,310 00 |              |
| Purchased homestead fees.. . . . .            | 2       | 20 00       |              |
| Improvements.. . . . .                        | 422     | 11,526 63   |              |
| Land sales, cash.. . . . .                    | 150     | 9,341 84    |              |
| Pre-emption payments.. . . . .                | 21      | 4,071 25    |              |
| Purchased homestead payments .. . . . .       | 19      | 2,819 22    |              |
| Searches.. . . . .                            | 232     | 58 00       |              |
| Applications for patent recommended.. . . . . | 1,646   | .....       |              |
| “ inspections received.. . . . .              | 780     | .....       |              |
| Entries cancelled.. . . . .                   | 1,399   | .....       |              |
| Sundries.. . . . .                            | 2       | 12 00       |              |
| Total.. . . . .                               |         |             | \$42,158 94  |
| Timber and Grazing Branch—                    |         |             |              |
| Bonus.. . . . .                               | 4       | \$ 9,877 95 |              |
| Ground rent.. . . . .                         | 43      | 5,193 91    |              |
| Royalty on sales.. . . . .                    | 45      | 13,946 70   |              |
| Timber permits.. . . . .                      | 1,509   | 8,622 97    |              |
| “ seizures.. . . . .                          | 131     | 26,376 52   |              |
| Hay permits.. . . . .                         | 527     | 921 19      |              |
| Grazing rentals, cash.. . . . .               | 165     | 589 81      |              |
| Fireguarding.. . . . .                        | 1       | 57 05       |              |
| Sundries.. . . . .                            | 564     | 59,522 92   |              |
| Total.. . . . .                               |         |             | 125,109 02   |
| Forestry Branch—                              |         |             |              |
| Timber dues.. . . . .                         | 30      | \$1,489 60  |              |
| Permit fees and rentals.. . . . .             | 63      | 22 75       |              |
| Seizures.. . . . .                            | 12      | 454 37      |              |
| Grazing rent, etc.. . . . .                   | 16      | 142 35      |              |
| Hay dues, etc.. . . . .                       | 39      | 212 25      |              |
| Total.. . . . .                               |         |             | 2,321 32     |
| Irrigation Branch—                            |         |             |              |
| Sales.. . . . .                               | 1       | \$509 60    |              |
| Total.. . . . .                               |         |             | 509 60       |
| Mining Lands and Yukon Branch—                |         |             |              |
| Mining fees.. . . . .                         | 71      | \$ 197 00   |              |
| Rental.. . . . .                              | 73      | 4,906 97    |              |
| Royalty .. . . . .                            | 21      | 12,045 49   |              |
| Assessment payments.. . . . .                 | 16      | 1,500 00    |              |
| Coal permits.. . . . .                        | 2       | .....       |              |
| Sundries.. . . . .                            | 445     | 55,138 84   |              |
| Total.. . . . .                               |         |             | 73,788 30    |
| School Lands Branch—                          |         |             |              |
| General sales.. . . . .                       | 5       | \$2,792 48  |              |
| Timber permits.. . . . .                      | 59      | 760 56      |              |
| Hay permits.. . . . .                         | 474     | 846 70      |              |
| Grazing rentals.. . . . .                     | 318     | 3,948 96    |              |
| Coal rental.. . . . .                         | 13      | 603 77      |              |
| Cultivation permits.. . . . .                 | 1       | 15 00       |              |
| Sundries.. . . . .                            | 87      | 4,280 84    |              |
| Total.. . . . .                               |         |             | 13,248 31    |
| Miscellaneous—                                |         |             |              |
| Seed grain and provision payments .. . . . .  | 500     | 19,334 53   |              |
| Total.. . . . .                               |         |             | \$19,334 53  |
| Grand total.. . . . .                         |         |             | \$277,470 02 |



SESSIONAL PAPER No. 25

# REPORT OF THE AGENT OF DOMINION LANDS, F. L. CHRISTIE, GRANDE PRAIRIE, ALTA.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                        | Number. | Revenue.    | Total.      |
|---------------------------------------|---------|-------------|-------------|
| Homestead fees.. .. .                 | 886     | \$8,860 00  |             |
| Improvements.. .. .                   | 107     | 4,617 15    |             |
| Land sales.. .. .                     | 32      | 3,663 77    |             |
| Searches.. .. .                       | 26      | 6 50        |             |
| Applications for patent.. .. .        | 380     | .....       |             |
| “ “ inspection .. .. .                | 201     | .....       |             |
| Entries cancelled.. .. .              | 269     | .....       |             |
| Total.. .. .                          |         |             | \$17,147 42 |
| Timber and Grazing Branch—            |         |             |             |
| Timber permits.. .. .                 | 365     | \$583 11    |             |
| Hay permits.. .. .                    | 298     | 671 10      |             |
| Grazing rentals.. .. .                | 64      | 713 52      |             |
| Hay excess.. .. .                     | 8       | 10 40       |             |
| Timber excess.. .. .                  | 83      | 294 40      |             |
| Hay bonus.. .. .                      | 1       | 4 00        |             |
| Hay lease rent.. .. .                 | 1       | 10 00       |             |
| Total.. .. .                          |         |             | 2,286 52    |
| Mining Lands and Yukon Branch—        |         |             |             |
| Mining fees.. .. .                    | 3       | \$15 00     |             |
| Rental.. .. .                         | 4       | 65 25       |             |
| Royalty.. .. .                        | 7       | 20 75       |             |
| Transfer of lease.. .. .              | 1       | 2 00        |             |
| Coal permits.. .. .                   | 2       | 20 00       |             |
| Sand permits.. .. .                   | 2       | 1 00        |             |
| Total.. .. .                          |         |             | 124 00      |
| School Lands Branch—                  |         |             |             |
| Hay permits.. .. .                    | 49      | \$ 55 10    |             |
| Grazing rentals.. .. .                | 64      | 931 27      |             |
| Hay excess.. .. .                     | 1       | 40          |             |
| Total.. .. .                          |         |             | 986 77      |
| Miscellaneous—                        |         |             |             |
| Seed grain and relief payments.. .. . | 184     | \$11,773 12 |             |
| Total.. .. .                          |         |             | 11,773 12   |
| Grand total.. .. .                    |         |             | \$32,317 84 |



9 GEORGE V, A. 1919

# REPORT OF THE AGENT OF DOMINION LANDS, W. C. COWELL, KAM- LOOPS, B.C.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                        | Number. | Revenue    | Total.      |
|---------------------------------------|---------|------------|-------------|
| Homesteads.. . . . .                  | 127     | \$1,270 00 |             |
| Improvements.. . . . .                | 63      | 2,847 83   |             |
| Land sales.. . . . .                  | 34      | 3,534 19   |             |
| Ground rent.. . . . .                 | 1       | 4 25       |             |
| Searches, etc.. . . . .               | 137     | 66 85      |             |
| Applications for patents.. . . . .    | 82      | .....      |             |
| “ inspections .. . . . .              | 54      | .....      |             |
| Homestead entries cancelled.. . . . . | 34      | .....      |             |
| Total.. . . . .                       |         |            | \$ 7,723 12 |
| Timber and Grazing Branch—            |         |            |             |
| Sale scale books.. . . . .            | 8       | \$ 45 00   |             |
| Bonus.. . . . .                       | 2       | 1,132 63   |             |
| Ground rent.. . . . .                 | 51      | 2,512 47   |             |
| Royalty.. . . . .                     | 24      | 6,846 81   |             |
| Timber permits.. . . . .              | 325     | 1,693 50   |             |
| “ seizures.. . . . .                  | 10      | 906 97     |             |
| Hay permits.. . . . .                 | 9       | 11 30      |             |
| Grazing rentals.. . . . .             | 452     | 6,687 24   |             |
| Registration fees.. . . . .           | 15      | 30 00      |             |
| Fire guarding collections.. . . . .   | 2       | 12 06      |             |
| Total.. . . . .                       |         |            | 19,877 98   |
| Forestry Branch—                      |         |            |             |
| Timber dues.. . . . .                 | 28      | \$453 70   |             |
| Permit fees.. . . . .                 | 35      | 8 75       |             |
| Seizures.. . . . .                    | 3       | 217 53     |             |
| Rentals.. . . . .                     | 8       | 93 40      |             |
| Hay dues.. . . . .                    | 12      | 13 35      |             |
| Total.. . . . .                       |         |            | 786 73      |
| Mining Lands Branch—                  |         |            |             |
| Rentals.. . . . .                     | 5       | \$133 20   |             |
| Permits.. . . . .                     | 1       | 0 50       |             |
| Total.. . . . .                       |         |            | 133 70      |
| Miscellaneous—                        |         |            |             |
| Seed grain collections.. . . . .      | 10      | \$256 45   |             |
| Total.. . . . .                       |         |            | 256 45      |
| Grand total.. . . . .                 |         |            | \$28,777 98 |



SESSIONAL PAPER No. 25

# REPORT OF THE AGENT OF DOMINION LANDS, G. H. MACDONELL, LETHBRIDGE, ALTA.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                              | Number. | Revenue.     | Total.         |
|---|---------|--------------|----------------|
| Homestead fees.. . . . .                    | 358     | \$ 3,580 00  |                |
| Pre-emption fees.. . . . .                  | 143     | 1,430 00     |                |
| Purchased homestead fees.. . . . .          | 32      | 320 00       |                |
| Improvements.. . . . .                      | 124     | 6,517 78     |                |
| Land sales, cash.. . . . .                  | 47      | 7,646 29     |                |
| Pre-emption payments .. . . . .             | 1,283   | 395,022 52   |                |
| Purchased homestead payments.. . . . .      | 98      | 17,564 51    |                |
| Searches, office fees, etc.. . . . .        | 262     | 65 75        |                |
| Applications for patent received.. . . . .  | 1,993   | .....        |                |
| “ “ inspection received.. . . . .           | 518     | .....        |                |
| Entries cancelled.. . . . .                 | 581     | .....        |                |
| Sundries—Registration fees .. . . . .       | 1       | 2 00         |                |
| Free homesteads .. . . . .                  | 1       | .....        |                |
| Total.. . . . .                             |         |              | \$432,148 85   |
| Timber and Grazing Branch—                  |         |              |                |
| Timber permits.. . . . .                    | 34      | \$ 53 50     |                |
| Hay permits.. . . . .                       | 99      | 78 50        |                |
| Grazing rentals.. . . . .                   | 1,197   | 26,289 72    |                |
| Improvements.. . . . .                      | 4       | 156 60       |                |
| Sundries.. . . . .                          | 9       | 18 00        |                |
| Total.. . . . .                             |         |              | 26,596 32      |
| Forestry Branch—                            |         |              |                |
| Timber dues.. . . . .                       | 6       | \$ 212 85    |                |
| Permit fees and rental.. . . . .            | 303     | 592 94       |                |
| Seizures.. . . . .                          | 8       | 83 95        |                |
| Grazing rent.. . . . .                      | 62      | 1,827 44     |                |
| Hay dues.. . . . .                          | 73      | 322 20       |                |
| Total.. . . . .                             |         |              | 3,039 38       |
| Irrigation Branch—                          |         |              |                |
| Sales.. . . . .                             | 19      | \$2,945 13   |                |
| Total.. . . . .                             |         |              | 2,945 13       |
| Mining Lands and Yukon Branch—              |         |              |                |
| Mining fees.. . . . .                       | 105     | \$ 1,180 00  |                |
| Rental.. . . . .                            | 105     | 11,211 82    |                |
| Royalty.. . . . .                           | 98      | 7,000 36     |                |
| Petroleum and natural gas.. . . . .         | 23      | 1,909 50     |                |
| Sundries.. . . . .                          | 9       | 22 50        |                |
| Total.. . . . .                             |         |              | 21,324 18      |
| School Lands Branch—                        |         |              |                |
| General sales.. . . . .                     | 43      | \$31,624 83  |                |
| Hay permits.. . . . .                       | 137     | 174 80       |                |
| Grazing rent.. . . . .                      | 351     | 6,398 90     |                |
| Mining fees.. . . . .                       | 1       | 5 00         |                |
| Coal, petroleum and gas rent.. . . . .      | 8       | 1,033 61     |                |
| Coal royalty.. . . . .                      | 1       | 2 50         |                |
| Sundries.. . . . .                          | 2       | 4 00         |                |
| Total.. . . . .                             |         |              | 39,243 64      |
| Miscellaneous—                              |         |              |                |
| Seed grain and provision payments.. . . . . | 4,674   | \$517,264 96 |                |
| Total.. . . . .                             |         |              | 517,264 96     |
| Grand total.. . . . .                       |         |              | \$1,042,562 46 |



REPORT OF AGENT OF DOMINION LANDS, G. K. SMITH, MOOSEJAW,  
SASK.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                          | Number. | Revenue.     | Total.       |
|---|---------|--------------|--------------|
| Homestead fees .. .. .                  | 421     | \$ 4,210 00  |              |
| Pre-emption fees.. .. .                 | 131     | 1,310 00     |              |
| Purchased homestead fees .. .. .        | 35      | 350 00       |              |
| Improvements.. .. .                     | 102     | 8,750 83     |              |
| Land sales, cash.. .. .                 | 20      | 2,009 35     |              |
| Pre-emption payments.. .. .             | 1,313   | 403,073 81   |              |
| Purchased homestead payments.. .. .     | 117     | 21,139 74    |              |
| Searches.. .. .                         | 1,618   | 429 25       |              |
| Applications for patent.. .. .          | 2,486   | .....        |              |
| “ inspection.. .. .                     | 584     | .....        |              |
| Entries cancelled.. .. .                | 462     | .....        |              |
| Total.. .. .                            |         |              | \$441,272 98 |
| Timber and Grazing Branch—              |         |              |              |
| Timber permits.. .. .                   | 3       | \$ 0 75      |              |
| Timber seizures.. .. .                  | 1       | 0 25         |              |
| Hay permits.. .. .                      | 47      | 137 50       |              |
| Grazing rentals, cash.. .. .            | 529     | 4,557 61     |              |
| Improvements.. .. .                     | 1       | 60 00        |              |
| Sundries—registration fee.. .. .        | 1       | 2 00         |              |
| Total.. .. .                            |         |              | 4,758 11     |
| Forestry Branch—                        |         |              |              |
| Surface rentals.. .. .                  | 3       | \$ 15 00     |              |
| Timber dues.. .. .                      | 107     | 238 25       |              |
| Permit fees and rentals.. .. .          | 53      | 158 75       |              |
| Seizures.. .. .                         | 12      | 69 55        |              |
| Grazing rent, etc.. .. .                | 70      | 489 35       |              |
| Hay dues, etc.. .. .                    | 74      | 305 10       |              |
| Total.. .. .                            |         |              | 1,276 00     |
| Mining Lands and Yukon Branch—          |         |              |              |
| Mining fees.. .. .                      | 25      | \$125 00     |              |
| Rental.. .. .                           | 7       | 156 00       |              |
| Royalty.. .. .                          | 38      | 311 51       |              |
| Quarry payments.. .. .                  | 1       | 5 00         |              |
| Coal permits.. .. .                     | 8       | 171 40       |              |
| Sundries.. .. .                         | 1       | 5 00         |              |
| Total.. .. .                            |         |              | 773 91       |
| School Lands Branch—                    |         |              |              |
| General sales.. .. .                    | 5       | \$1,236 92   |              |
| Timber permits.. .. .                   | 3       | 14 75        |              |
| Hay permits.. .. .                      | 997     | 1,910 80     |              |
| Grazing rentals.. .. .                  | 653     | 7,275 96     |              |
| Coal rental.. .. .                      | 1       | 25 00        |              |
| Total.. .. .                            |         |              | 10,463 43    |
| Miscellaneous—                          |         |              |              |
| Seed grain and provision re-payments .. | 3,263   | \$287,172 77 |              |
| Sundries.. .. .                         | 9       | 45 85        |              |
| Total.. .. .                            |         |              | 287,218 62   |
| Grand total.. .. .                      |         |              | \$745,763 05 |



SESSIONAL PAPER No. 25

# REPORT OF THE AGENT OF DOMINION LANDS, W. D. MAGEE, NEW WESTMINSTER, B.C.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                           | Number. | Revenue.  | Total.            |
|--|---------|-----------|-------------------|
| Homestead fees. . . . .                  | 33      | \$ 330 00 |                   |
| Improvements.. . . .                     | 14      | 1,480 00  |                   |
| Land sales.. . . .                       | 4       | 178 69    |                   |
| Townsite payments.. . . .                | 8       | 590 93    |                   |
| Purchased homestead payments.. . . .     | 50      | 1,471 24  |                   |
| Searches, maps, etc.. . . . .            | 24      | 6 15      |                   |
| Applications for patent received.. . . . | 22      | .....     |                   |
| "    "    inspection received.. . . .    | 24      | .....     |                   |
| Entries cancelled.. . . .                | 32      | .....     |                   |
| Total.. . . .                            |         |           | \$4,057 01        |
| Mining Lands and Yukon Branch—           |         |           |                   |
| Mining fees.. . . .                      | 40      | \$ 195 50 |                   |
| Rental.. . . .                           | 74      | 3,547 87  |                   |
| Sundries.. . . .                         | 12      | 23 00     |                   |
| Total.. . . .                            |         |           | 3,766 37          |
| Grand total.. . . .                      |         |           | <u>\$7,823 38</u> |

# REPORT OF THE AGENT OF DOMINION LANDS, F. BARKER, THE PAS, MAN.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch--                | Number. | Revenue.   | Total             |
|--------------------------------|---------|------------|-------------------|
| Land sales, cash.. . . .       | 7       | \$ 509 40  |                   |
| Total.. . . .                  |         |            | \$ 509 40         |
| Timber and Grazing Branch—     |         |            |                   |
| Timber permits.. . . .         | 38      | \$1,204 30 |                   |
| "    seizures.. . . .          | 1       | 22 50      |                   |
| Hay permits.. . . .            | 15      | 35 80      |                   |
| Sundries.. . . .               | 2       | 101 50     |                   |
| Total.. . . .                  |         |            | \$1,364 10        |
| Mining Lands and Yukon Branch— |         |            |                   |
| Mining fees.. . . .            | 382     | \$1,762 50 |                   |
| Assessment payments.. . . .    | 7       | 1,000 00   |                   |
| Sundries.. . . .               | 748     | 1,912 30   |                   |
| Total.. . . .                  |         |            | 4,674 80          |
| School Lands Branch—           |         |            |                   |
| Hay permits.. . . .            | 2       | \$8 50     |                   |
| Total.. . . .                  |         |            | 8 50              |
| Grand total.. . . .            |         |            | <u>\$6,556 80</u> |



9 GEORGE V, A. 1919

# REPORT OF THE AGENT OF DOMINION LANDS, J. E. CARSON, PEACE RIVER, ALTA.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                                 | Number. | Revenue.    | Total.             |
|--|---------|-------------|--------------------|
| Homestead entries.. . . . .                    | 451     | \$4,510 00  |                    |
| Improvements.. . . . .                         | 46      | 1,971 12    |                    |
| Land sales.. . . . .                           | 24      | 2,467 65    |                    |
| Searches.. . . . .                             | 24      | 6 00        |                    |
| Applications for patent.. . . . .              | 337     | .....       |                    |
| “ inspection.. . . . .                         | 94      | .....       |                    |
| Entries cancelled .. . . . .                   | 140     | .....       |                    |
| Land lease.. . . . .                           | 1       | 3 20        |                    |
| Total.. . . . .                                |         |             | \$ 8,957 97        |
| Timber and Grazing Branch—                     |         |             |                    |
| Timber permits.. . . . .                       | 356     | \$961 46    |                    |
| Hay permits .. . . . .                         | 146     | 249 00      |                    |
| Grazing rentals .. . . . .                     | 73      | 539 04      |                    |
| Total.. . . . .                                |         |             | 1,749 50           |
| Mining Lands and Yukon Branch—                 |         |             |                    |
| Petroleum and natural gas lease.. . . . .      | 546     | \$21,844 71 |                    |
| Coal permits.. . . . .                         | 5       | 120 00      |                    |
| Gravel.. . . . .                               | 1       | 5 00        |                    |
| Total.. . . . .                                |         |             | 21,969 71          |
| School Lands Branch—                           |         |             |                    |
| Hay permits.. . . . .                          | 36      | \$ 151 64   |                    |
| Grazing rentals.. . . . .                      | 10      | 166 24      |                    |
| Petroleum leases.. . . . .                     | 32      | 1,098 20    |                    |
| Cultivation permits .. . . . .                 | 1       | 11 50       |                    |
| Total.. . . . .                                |         |             | 1,427 58           |
| Miscellaneous—                                 |         |             |                    |
| Seed grain and provision repayments .. . . . . | 116     | \$6,689 10  |                    |
| Total.. . . . .                                |         |             | 6,689 10           |
| Grand total.. . . . .                          |         |             | <u>\$40,793 86</u> |



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# REPORT OF THE AGENT OF DOMINION LANDS, R. M. TREEN, PRINCE ALBERT, SASK.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                                | Number. | Revenue.    | Total        |
|---|---------|-------------|--------------|
| Homestead fees.. . . . .                      | 556     | \$5,560 00  |              |
| Purchased homestead fees .. . . .             | 2       | 20 00       |              |
| Improvements.. . . . .                        | 116     | 3,861 25    |              |
| Land sales, cash.. . . . .                    | 57      | 3,521 67    |              |
| “ “ scrip.. . . . .                           | 1       | 88 35       |              |
| Pre-emption payments .. . . .                 | 2       | 238 00      |              |
| Purchased homestead payments .. . . .         | 7       | 997 75      |              |
| Searches, map sales, office fees. . . . .     | 209     | 54 00       |              |
| Applications for patent received .. . . .     | 259     | .....       |              |
| “ “ inspection received.. . . .               | 438     | .....       |              |
| Entries cancelled.. . . . .                   | 586     | .....       |              |
| Total.. . . . .                               |         |             | \$14,341 02  |
| Timber and Grazing Branch—                    |         |             |              |
| Bonus.. . . . .                               | 1       | \$ 1,500 00 |              |
| Ground rent.. . . . .                         | 16      | 11,134 71   |              |
| Royalty on sales.. . . . .                    | 54      | 72,568 34   |              |
| Timber permits.. . . . .                      | 538     | 6,035 18    |              |
| “ seizures.. . . . .                          | 21      | 2,738 46    |              |
| Hay permits.. . . . .                         | 367     | 686 15      |              |
| Grazing rentals, cash.. . . . .               | 244     | 861 33      |              |
| Sundries (fire tax).. . . . .                 | .....   | 49 78       |              |
| Total.. . . . .                               |         |             | 95,573 95    |
| Forestry Branch—                              |         |             |              |
| Permit fees and rental.. . . . .              | 435     | \$4,858 82  |              |
| Seizures.. . . . .                            | 17      | 242 30      |              |
| Grazing rent, etc.. . . . .                   | 22      | 174 15      |              |
| Hay dues, etc.. . . . .                       | 90      | 270 30      |              |
| Total.. . . . .                               |         |             | 5,545 57     |
| Mining Lands and Yukon Branch—                |         |             |              |
| Mining fees.. . . . .                         | 499     | \$2,584 50  |              |
| Total.. . . . .                               |         |             | 2,584 50     |
| School Lands Branch—                          |         |             |              |
| General sales.. . . . .                       | 2       | \$1,031 36  |              |
| Timber permits.. . . . .                      | 29      | 506 77      |              |
| Hay permits.. . . . .                         | 307     | 566 40      |              |
| Grazing rentals.. . . . .                     | 124     | 1,259 31    |              |
| Cultivation permits.. . . . .                 | 1       | 35 50       |              |
| Sundries.. . . . .                            | 8       | 49 00       |              |
| Total.. . . . .                               |         |             | 3,448 34     |
| Miscellaneous—                                |         |             |              |
| Seed grain and provision re-payments. . . . . | 209     | \$12,095 52 |              |
| Total.. . . . .                               |         |             | 12,095 52    |
| Grand total.. . . . .                         |         |             | \$133,588 90 |



REPORT OF THE AGENT OF DOMINION LANDS, T. J. WADMAN, REVEL-STOKE, B.C.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                         | Number. | Revenue.    | Total.      |
|--|---------|-------------|-------------|
| Homestead fees.. . . . .               | 18      | \$180 00    |             |
| Improvements.. . . . .                 | 15      | 406 66      |             |
| Land sales.. . . . .                   | 3       | 350 38      |             |
| Townsite payments .. . . . .           | 11      | 300 30      |             |
| Purchased homestead payments.. . . . . | 4       | 142 34      |             |
| Searches, map sales, etc.. . . . .     | 120     | 20 53       |             |
| Sundries.. . . . .                     | 2       | 4 00        |             |
| Applications for patent.. . . . .      | 19      | .....       |             |
| "            inspection.. . . . .      | 8       | .....       |             |
| Entries cancelled.. . . . .            | 26      | .....       |             |
| Total.. . . . .                        |         |             | \$ 1,404 21 |
| Timber and Grazing Lands Branch—       |         |             |             |
| Bonus on timber.. . . . .              | 5       | \$ 4,306 51 |             |
| Ground rents .. . . . .                | 75      | 2,418 41    |             |
| Royalties.. . . . .                    | 28      | 18,693 97   |             |
| Timber permits.. . . . .               | 86      | 639 64      |             |
| "    seizures.. . . . .                | 3       | 532 50      |             |
| Grazing rentals .. . . . .             | 1       | 3 20        |             |
| Fireguarding.. . . . .                 | 1       | 1,118 59    |             |
| Sundries.. . . . .                     | 4       | 2 50        |             |
| Total.. . . . .                        |         |             | 27,715 32   |
| Mining Lands and Yukon Branch—         |         |             |             |
| Rentals .. . . . .                     | 1       | \$40 20     |             |
| Total.. . . . .                        |         |             | 40 20       |
| Grand total.. . . . .                  |         |             | \$29,159 73 |



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# REPORT OF THE AGENT OF DOMINION LANDS, W. A. MACINNES, SASKATOON, SASK.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                                | Number. | Revenue.     | Total        |
|---|---------|--------------|--------------|
| Homestead fees.. . . . .                      | 226     | \$ 2,260 00  |              |
| Pre-emption fees.. . . . .                    | 57      | 570 00       |              |
| Purchased homestead fees.. . . . .            | 23      | 230 00       |              |
| Improvements.. . . . .                        | 52      | 4,897 10     |              |
| Land sales, cash.. . . . .                    | 39      | 3,753 70     |              |
| Pre-emption payments.. . . . .                | 570     | 181,735 77   |              |
| Purchased homestead payments.. . . . .        | 308     | 58,387 41    |              |
| Searches, map sales, office fees.. . . . .    | 780     | 195 00       |              |
| Applications for patent received.. . . . .    | 1,600   | .....        |              |
| "    "    inspection received.. . . . .       | 257     | .....        |              |
| Entries cancelled.. . . . .                   | 279     | .....        |              |
| Total.. . . . .                               |         |              | \$252,028 98 |
| Timber and Grazing Branch—                    |         |              |              |
| Timber permits.. . . . .                      | 20      | \$ 21 50     |              |
| "    seizures.. . . . .                       | 4       | 3 75         |              |
| Hay permits.. . . . .                         | 80      | 178 55       |              |
| Grazing rentals, cash.. . . . .               | 52      | 143 78       |              |
| "    "    scrip.. . . . .                     | 50      | 505 32       |              |
| Excess hay.. . . . .                          | 2       | 1 70         |              |
| Total.. . . . .                               |         |              | 854 60       |
| Forestry Branch—                              |         |              |              |
| Timber dues.. . . . .                         | 56      | \$ 89 00     |              |
| Permit fees and rental.. . . . .              | 2       | 50           |              |
| Seizures.. . . . .                            | 1       | 2 00         |              |
| Grazing rent, etc.. . . . .                   | 26      | 229 80       |              |
| Hay dues, etc.. . . . .                       | 14      | 27 45        |              |
| Total.. . . . .                               |         |              | 348 75       |
| Mining Lands and Yukon Branch—                |         |              |              |
| Sundries.. . . . .                            | 12      | \$456 25     |              |
| Total.. . . . .                               |         |              | \$456 25     |
| School Lands Branch—                          |         |              |              |
| General sales.. . . . .                       | 4       | \$2,750 00   |              |
| Timber permits.. . . . .                      | 3       | 13 25        |              |
| Hay permits.. . . . .                         | 567     | 1,525 95     |              |
| Grazing rentals.. . . . .                     | 405     | 4,405 38     |              |
| Cultivation permits.. . . . .                 | 11      | 203 50       |              |
| Excess hay.. . . . .                          | 13      | 813 40       |              |
| Total.. . . . .                               |         |              | 9,711 48     |
| Miscellaneous—                                |         |              |              |
| Seed—grain and provision repayments.. . . . . | 3,040   | \$336,584 06 |              |
| Total.. . . . .                               |         |              | \$336,584 06 |
| Grand total.. . . . .                         |         |              | \$599,984 12 |



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# REPORT OF THE AGENT OF DOMINION LANDS, S. LEE, SWIFT CURRENT, SASK.

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                         | Number. | Revenue.     | Total.              |
|--|---------|--------------|---------------------|
| Homestead entries.. . . . .            | 320     | \$ 3,200 00  |                     |
| Pre-emption entries.. . . . .          | 128     | 1,280 00     |                     |
| Purchased homestead entries.. . . . .  | 17      | 170 00       |                     |
| Improvements.. . . . .                 | 52      | 4,578 15     |                     |
| Land sales, cash.. . . . .             | 10      | 1,912 05     |                     |
| Pre-emption payments.. . . . .         | 1,043   | 358,629 96   |                     |
| Purchased homestead payments .. . . .  | 121     | 25,331 65    |                     |
| Searches, map sales, etc.. . . . .     | 1,592   | 398 00       |                     |
| Total.. . . . .                        |         |              | \$395,499 81        |
| Timber and Grazing Branch—             |         |              |                     |
| Timber permits.. . . . .               | 4       | \$ 1 00      |                     |
| Hay permits.. . . . .                  | 53      | 113 60       |                     |
| Grazing rentals, cash .. . . .         | 419     | 5,346 65     |                     |
| Total.. . . . .                        |         |              | 5,461 25            |
| Forestry Branch—                       |         |              |                     |
| Permit fees and rental.. . . . .       | 1       | \$ 1 00      |                     |
| Seizures.. . . . .                     | 1       | 3 00         |                     |
| Grazing rent.. . . . .                 | 18      | 221 25       |                     |
| Hay dues.. . . . .                     | 10      | 37 75        |                     |
| Total.. . . . .                        |         |              | 263 00              |
| Irrigation Branch—                     |         |              |                     |
| Sales.. . . . .                        | 1       | \$0 30       |                     |
| Total.. . . . .                        |         |              | 30                  |
| Mining Lands and Yukon Branch—         |         |              |                     |
| Mining fees.. . . . .                  | 5       | \$25 00      |                     |
| Rental.. . . . .                       | 1       | 12 00        |                     |
| Royalty.. . . . .                      | 2       | 5 10         |                     |
| Assessment payments.. . . . .          | 3       | 45 00        |                     |
| Coal permits.. . . . .                 | 1       | 2 00         |                     |
| Total.. . . . .                        |         |              | 89 10               |
| School Lands Branch—                   |         |              |                     |
| Hay permits.. . . . .                  | 451     | \$ 742 70    |                     |
| Grazing rentals.. . . . .              | 384     | 4,971 61     |                     |
| Cultivation permits.. . . . .          | 1       | 5 00         |                     |
| Sundries.. . . . .                     | 5       | 4 70         |                     |
| Total.. . . . .                        |         |              | 5,724 01            |
| Miscellaneous—                         |         |              |                     |
| Seed grain and provision repayments .. | 1,889   | \$327,178 38 |                     |
| Total.. . . . .                        |         |              | 327,178 38          |
| Grand total.. . . . .                  |         |              | <u>\$734,215 85</u> |



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REPORT OF AGENT OF DOMINION LANDS, L. RANKIN, WINNIPEG,  
MAN..

Statement of business transacted during the fiscal year ending March 31, 1918:—

| Patent Branch—                    | Number. | Revenue.    | Total       |
|-----------------------------------|---------|-------------|-------------|
| Homestead entries.. . . . .       | 868     | \$ 8,680 00 |             |
| Improvements.. . . . .            | 201     | 7,675 07    |             |
| Land sales, cash.. . . . .        | 59      | 5,369 69    |             |
| Searches, maps, etc.. . . . .     | 741     | 480 65      |             |
| Seed grain.. . . . .              | 493     | 14,273 19   |             |
| Total.. . . . .                   |         |             | \$26,478 60 |
| Timber and Grazing Lands Branch—  |         |             |             |
| Grazing rentals.. . . . .         | 82      | \$510 58    |             |
| Hay rentals.. . . . .             | 2       | 20 00       |             |
| Total.. . . . .                   |         |             | 530 58      |
| Mines Branch—                     |         |             |             |
| Mining fees.. . . . .             | 1,315   | \$5,906 30  |             |
| Rentals.. . . . .                 | 35      | 860 67      |             |
| Quarries.. . . . .                | 3       | 76 96       |             |
| Total.. . . . .                   |         |             | 6,843 93    |
| School Lands Branch—              |         |             |             |
| Sales.. . . . .                   | 22      | \$5,335 01  |             |
| Grazing rentals.. . . . .         | 90      | 1,188 97    |             |
| Coal permit.. . . . .             | 1       | 5 00        |             |
| Cultivation permit.. . . . .      | 1       | 4 00        |             |
| Total.. . . . .                   |         |             | 6,532 98    |
| Grand total.. . . . .             |         |             | \$50,386 09 |
| General—                          |         |             |             |
| Applications for patent.. . . . . | 666     |             |             |
| “ “ inspections.. . . . .         | 401     |             |             |
| Entries cancelled.. . . . .       | 582     |             |             |

REPORT OF THE MINING LANDS AND YUKON BRANCH.—H. H. ROWATT,  
CONTROLLER.

The total revenue of this branch, derived from all sources during the fiscal year, amounts to \$639,929.98, being an increase of \$27,001.92 over the previous year. Owing to conditions resulting from the war, it has been found necessary to grant, in a number of cases, extensions of time within which to pay the rental of mining locations acquired under lease.

The statements lettered “A” and “B,” showing in different forms how the revenue is made up, will be found at the end of this report. The statement lettered “A” shows the total revenue for each month, and the statement lettered “B” shows the revenue collected at each agency, including the Yukon Territory.

The revenue for the Yukon Territory for the year amounts to \$150,809.32.

The reports and statements for the fiscal year from the Gold Commissioner and the Crown Timber and Land Agent at Dawson in the Yukon Territory, also the report of the Inspecting Engineer, are herewith submitted.



## TIMBER IN THE YUKON TERRITORY.

The total amount of dues collected on account of timber in the Yukon Territory during the fiscal year was \$12,235.41. During the year 145 permits were issued, under the authority of which 257,936 feet b.m. of timber and 18,524½ cords of wood were cut. The dues collected on permits issued amounted to \$9,027.61.

There are in existence ninety timber berths held under license to cut timber within the Territory, covering an area of 188.93 square miles, which licenses were granted prior to the 10th May, 1906, on which date the regulations governing the granting of licenses to cut such timber in the Territory were rescinded, and regulations for the issue of permits to cut timber substituted therefor.

According to returns received in the department, the number of feet b.m. of lumber manufactured under license during the year and sold was 250,290 and the number of cords of wood cut 3,119½. Seizure dues, amounting to \$480.86, were collected on 443¾ cords of wood and 1,778 feet of lumber cut in trespass. This does not include the very large amount of timber and cordwood cut free of dues for mining purposes.

## MINING LANDS OTHER THAN COAL.

During the fiscal year 752 entries for quartz mining claims were granted by the mining recorders in Manitoba, Saskatchewan, and Alberta, and by the mining recorder for unorganized districts.

According to the returns received from the Yukon Territory during the fiscal year, 293 entries for placer mining claims, 64 entries for quartz mining claims, and 3,667 renewals and relocations were recorded. The revenue collected from these sources and from fees for registering documents in connection with mining properties was \$60,964.30.

## ROYALTY ON GOLD MINED IN THE YUKON TERRITORY.

The total amount collected up to the 31st March, 1918, for royalty on gold, the output of placer mining claims in the Yukon Territory, after deducting the exemption at one time allowed under the regulations, was \$4,664,620.64, of which amount \$81,650.55 was collected during the last fiscal year. For the purpose of estimating this royalty the gold is valued at \$15 an ounce, which is much below its real value.

The actual value of gold produced from placer mining operations in the Yukon Territory, up to the 31st March last, might be safely placed at \$152,316,110.

The statement lettered "C," at the end of this report, shows the total gold production, the total production subject to royalty, and the total royalty collected for each fiscal year from the 1st May, 1898, to the 31st March, 1918.

## DREDGING.

Twenty-five leases to dredge for minerals in the beds of rivers in the Yukon Territory are now in force, covering a total frontage of 147.76 miles. The total revenue derived from this source up to the 31st March, 1918, amounts to \$198,260.09, of which \$701.76 was collected during the fiscal year just closed.

These dredging leases are confined to the Yukon, Fortymile, Big Salmon, Klondike, and Sixtymile rivers.

There are in operation in the Yukon Territory eleven dredges. Most of these dredges are working on the Klondike river and tributaries, and are operated by hydro-elective motive power. Two of the largest gold-saving dredges in the world are being operated most successfully on the Klondike river-flat.

Eleven leases to dredge for minerals in the submerged beds of rivers in the provinces of Alberta and Saskatchewan are now in force, covering a total frontage



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of 52.19 miles. Of these leases, ten are in the province of Alberta and include 45 miles, and one is in the province of Saskatchewan and includes 7.19 miles. The total revenue derived from this source up to the 31st March, 1918, amounts to \$46,526.35, of which amount \$470.20 was collected during the past fiscal year.

## HYDRAULIC MINING.

The hydraulic mining regulations relating to the Yukon Territory were rescinded by an Order in Council dated the 2nd of February, 1904, but leases already granted were not affected by such withdrawal.

There are still in force in the Yukon Territory seven hydraulic mining leases, covering an area of 15.27 square miles. Since the hydraulic mining regulations were first established in December, 1898, forty-seven hydraulic mining leases have been issued, all of which have now been cancelled, with the exception of the above number.

## HOMESTEADS IN THE YUKON TERRITORY.

Ninety-four homestead entries in the Yukon Territory have been granted, of which seventy-one are now in force, comprising a total area of 11,050.56 acres. Patents have been issued for seven homesteads.

## PETROLEUM AND NATURAL GAS.

There are now in force under the regulations 3,369 petroleum and natural gas leases embracing a total area of 1,173,591 acres distributed as follows: In Manitoba, five leases, comprising 1,213 acres; in Saskatchewan, ninety-two leases, comprising 43,476 acres; in Alberta, 2,966 leases, comprising 1,044,777 acres; in British Columbia, 298 leases, comprising 75,165 acres; and in the Northwest Territories, eight leases, comprising 8,960 acres. The total revenue derived from petroleum lands during the year amounts to \$124,727.19.

Natural gas has been discovered and is now being utilized for commercial and domestic purposes in different parts of the province of Alberta. Oil has been discovered, but not in large quantities. Boring operations are being carried on throughout Alberta and Saskatchewan with a view to further discoveries.

## QUARRYING.

The number of leases now in force, issued under the provisions of the regulations, is 274, distributed as follows: In Manitoba, eighty-five leases, comprising 2,130 acres; in Saskatchewan, thirty-four leases, comprising 1,058 acres; in Alberta, ninety leases, comprising 3,775 acres; and in British Columbia, sixty-five leases, comprising 2,025 acres.

The total revenue collected during the fiscal year on account of quarrying leases, including the application fees, amounts to \$7,129.70.

## WATER-RIGHTS.

There are now in force in the Yukon Territory 468 grants to divert water for mining purposes, aggregating a total of 115,571 miner's inches. During the last fiscal year thirteen water-rights were issued, comprising 5,925 miner's inches.

Grants are issued by this department, authorizing the diversion of water in the Yukon Territory for power purposes. Up to date, thirteen grants have been issued, authorizing the diversion of 131,200 miner's inches of water. Four of these grants have been permitted to lapse, but the remaining nine, authorizing the diversion of



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66,200 miner's inches of water, are in good standing. Two power plants have been installed, one of which is situated on the north fork of the Klondike river, and it appears that this plant is kept in operation during the winter, and the power generated is being used for heating and lighting purposes in the city of Dawson.

## COAL MINING LANDS.

The total amount collected on account of the sale of coal mining lands up to the 31st March, 1918, was \$2,097,228.90.

## COAL LEASES.

The total number of coal mining leases in force at the close of the fiscal year was 562, including a total area of 288,087 acres, distributed as follows: In the province of Alberta, 479 leases, comprising 280,310 acres; in Saskatchewan, eighty-two leases, comprising 7,737 acres; and in the Yukon Territory one lease, comprising 40 acres.

The total number of leases of coal mining rights issued during the year was 117, comprising 46,543 acres. The total revenue received during the year for rental of coal mining rights was \$182,323.53.

## ROYALTY ON COAL.

Under the regulations governing the issue of leases to mine coal the royalty is fixed at 5 cents per ton of 2,000 pounds on the merchantable output of the mine.

The following is a statement showing the amount collected on account of royalty on coal mined from lands in the western provinces, the Northwest Territories, and the Yukon Territory, respectively, during each year since the regulations came into effect:—

| Year.        | Alberta.   | Saskatchewan. | British Columbia. | Yukon.   | N. W. T. |
|--------------|------------|---------------|-------------------|----------|----------|
|              | \$ cts.    | \$ cts.       | \$ cts.           | \$ cts.  | \$ cts.  |
| 1903-4.....  | 56 90      | Nil.          | Nil.              | 2 40     | Nil.     |
| 1904-5.....  | 2,822 00   | 110 70        | Nil.              | 47 00    | Nil.     |
| 1905-6.....  | 2,379 75   | 47 10         | Nil.              | 569 33   | Nil.     |
| 1906-7.....  | 3,865 26   | 74 20         | Nil.              | 517 34   | Nil.     |
| 1907-8.....  | 7,621 67   | 4 30          | Nil.              | 1,543 38 | Nil.     |
| 1908-9.....  | 5,322 39   | 358 11        | Nil.              | 371 73   | Nil.     |
| 1909-10..... | 153,559 98 | 1,672 50      | 3 00              | 136 38   | Nil.     |
| 1910-11..... | 218,932 88 | 2,184 74      | 3 50              | 125 00   | Nil.     |
| 1911-12..... | 104,894 55 | 2,034 74      | 2 78              | 390 00   | Nil.     |
| 1912-13..... | 142,997 79 | 3,145 72      | 6 95              | 1,069 11 | Nil.     |
| 1913-14..... | 147,198 75 | 2,123 43      | 19 35             | Nil.     | Nil.     |
| 1914-15..... | 104,489 77 | 1,880 06      | 4 90              | Nil.     | Nil.     |
| 1915-16..... | 67,190 17  | 2,601 52      | 3 50              | Nil.     | 5 10     |
| 1916-17..... | 149,447 82 | 2,228 08      | 8 92              | Nil.     | Nil.     |
| 1917-18..... | 144,634 75 | 4,046 55      | Nil.              | Nil.     | 6 00     |

By an Order in Council dated the 16th March, 1918, provision was made that, owing to the scarcity of fuel in the Yukon Territory, no royalty shall be levied or collected on coal mined in that territory for a period of five years; that is up to 7th of April, 1923.

The total amount derived from coal mining lands on account of purchase price, rental, royalty and application fees, during the fiscal year, amounted to \$338,701.19.

During the past year gold, to the value of \$9,137 was extracted from ores taken from mineral claims in northern Manitoba, and over 3,000 tons of copper ore from the same district were profitably treated at Trail, B.C.

There are eleven members of the staff of this branch on active service.



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## REVENUE OF DOMINION LANDS, INCLUDING THE YUKON TERRITORY.

A.—STATEMENT of Receipts on account of Coal and Minerals in the Provinces and Territories, also Timber, Hay, Coal, Hydraulic Mining, Dredging, Royalty on Gold, Mining Fees, Rental of Agricultural Lands, Water Power and Water Fronts and sale of Dominion Lands in the Yukon Territory for the fiscal year ended March 31, 1918.

|   |            |
|---|------------|
| Quartz acreage sale.. . . . .               | \$ 526 67  |
| Dominion Lands sales.. . . . .              | 585 45     |
| Coal sales.. . . . .                        | 3,600 36   |
| Coal mining.. . . . .                       | 4,090 00   |
| Coal royalty.. . . . .                      | 148,687 30 |
| Coal rental .. . . . .                      | 182,323 53 |
| Rental, Yukon.. . . . .                     | 6,872 15   |
| Timber dues, Yukon.. . . . .                | 12,235 41  |
| Mining fees.. . . . .                       | 60,964 30  |
| Hydraulic leases.. . . . .                  | 2,273 23   |
| Dredging leases, N.W.T.. . . . .            | 470 20     |
| Dredging leases, Yukon.. . . . .            | 701 76     |
| Gold export tax.. . . . .                   | 81,650 55  |
| Free certificates, export of gold.. . . . . | 35 00      |
| Stone quarry.. . . . .                      | 7,129 70   |
| Registration fees.. . . . .                 | 125 50     |
| Homestead fees.. . . . .                    | 50 00      |
| Hay, Yukon.. . . . .                        | 31 10      |
| Potash.. . . . .                            | 1,630 00   |
| Tar-sands.. . . . .                         | 1,008 98   |
| Sand, stone and gravel.. . . . .            | 56 00      |
| Petroleum and natural gas.. . . . .         | 124,727 19 |
| Interim receipt account.. . . . .           | 155 60     |
| Amount.. . . . .                            | 639,929 98 |

B.—STATEMENT showing the total amount of Revenue Collected, including the Yukon Territory, for the fiscal year ended March 31, 1918.

|  |            |
|--|------------|
| Quartz acreage sales.. . . . .                   | \$ 526 67  |
| Dominion Lands sales.. . . . .                   | 585 45     |
| Coal sales.. . . . .                             | 3,600 36   |
| Coal mining.. . . . .                            | 4,090 00   |
| Coal royalty.. . . . .                           | 148,687 30 |
| Coal rental.. . . . .                            | 182,323 53 |
| Rental Yukon.. . . . .                           | 6,872 15   |
| Timber dues, Yukon .. . . . .                    | 12,235 41  |
| Mining fees.. . . . .                            | 60,964 30  |
| Hydraulic leases .. . . . .                      | 2,273 23   |
| Dredging leases, Northwest Territories.. . . . . | 470 20     |
| Dredging leases, Yukon.. . . . .                 | 701 76     |
| Gold export tax.. . . . .                        | 81,650 55  |
| Free certificates, export of gold.. . . . .      | 35 00      |
| Stone quarry.. . . . .                           | 7,129 70   |
| Registration fees .. . . . .                     | 125 50     |
| Homestead fees.. . . . .                         | 50 00      |
| Hay, Yukon.. . . . .                             | 31 10      |
| Potash.. . . . .                                 | 1,630 00   |
| Tar-sands.. . . . .                              | 1,008 98   |
| Sand, stone and gravel.. . . . .                 | 56 00      |
| Petroleum and natural gas.. . . . .              | 124,727 19 |
| Interim receipt account.. . . . .                | 155 60     |
| Amount.. . . . .                                 | 639,929 98 |



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C.—STATEMENT showing the total Gold Production, the total subject to Royalty and the total Royalty collected for each fiscal year from May 1, 1898, to March 31, 1918.

| Fiscal Year.   | Gold<br>Production. | Subject<br>to<br>Royalty | Royalty<br>Collected. | Total<br>Revenue. |
|----------------|---------------------|--------------------------|-----------------------|-------------------|
|                | \$ cts.             | \$ cts.                  | \$ cts.               | \$ cts.           |
| 1897-1898..... | 3,072,773 20        | 2,732,928 20             | 273,292 82            | 273,292 82        |
| 1898-1899..... | 7,582,283 02        | 5,882,626 00             | 588,262 37            | 589,943 52        |
| 1899-1900..... | 9,809,464 64        | 7,307,720 00             | 730,771 99            | 733,041 04        |
| 1900-1901..... | 9,162,082 79        | 7,234,416 17             | 592,660 98            | 596,368 03        |
| 1901-1902..... | 9,566,340 52        | 8,367,225 88             | 331,436 79            | 331,532 04        |
| 1902-1903..... | 12,113,015 34       | 12,113,015 34            | 302,893 48            | 302,893 48        |
| 1903-1904..... | 10,790,663 12       | 10,790,663 12            | 272,217 96            | 272,217 96        |
| 1904-1905..... | 8,222,053 91        | 8,222,053 91             | 206,760 87            | 206,760 87        |
| 1905-1906..... | 6,540,007 09        | 6,540,007 09             | 163,963 25            | 163,963 25        |
| 1906-1907..... | 3,304,791 05        | 3,304,791 05             | 82,622 42             | 82,622 42         |
| 1907-1908..... | 2,820,161 60        | 2,820,161 60             | 70,504 65             | 70,504 65         |
| 1908-1909..... | 3,260,282 80        | 3,260,282 80             | 81,507 07             | 81,507 07         |
| 1909-1910..... | 3,594,251 20        | 3,594,251 20             | 89,844 10             | 89,844 10         |
| 1910-1911..... | 4,126,727 60        | 4,126,727 60             | 103,168 19            | 103,168 19        |
| 1911-1912..... | 4,024,236 75        | 4,024,236 75             | 100,606 29            | 100,606 29        |
| 1912-1913..... | 5,018,411 85        | 5,018,411 85             | 125,460 52            | 125,460 52        |
| 1913-1914..... | 5,301,507 60        | 5,301,507 60             | 132,537 69            | 132,537 69        |
| 1914-1915..... | 4,649,634 40        | 4,649,634 40             | 116,241 04            | 116,241 04        |
| 1915-1916..... | 4,458,278 00        | 4,458,278 00             | 111,457 19            | 111,457 19        |
| 1916-1917..... | 3,960,206 99        | 3,960,206 99             | 99,007 92             | 99,007 92         |
| 1917-1918..... | 3,266,018 85        | 3,266,018 85             | 81,650 55             | 81,650 55         |
| Total.....     | 124,643,192 32      | 116,975,164 40           | 4,656,868 14          | 4,664,620 64      |

## GOLD COMMISSIONER'S REPORT, G. P. MacKENZIE.

### GOLD PLACER MINING.

There were 217,734.57 ounces of gold mined during the year, and royalty amounting to \$81,650.55 paid.

The production was very materially affected by conditions brought about by the war. The cost of machinery, tools, and, in general, all kinds of supplies has greatly increased, in some instances as much as 100 per cent, as well as the cost of labour.

The North West Corporation, in particular, the owner of very large mining areas, have not been able to secure the capital necessary to put equipment on their property, and have consequently confined their operations to removing the overburden from the gravels by ground sluicing, and only sufficient of this class of work has been performed to represent their claims.

### THE YUKON GOLD COMPANY.

*Dredging operations.*—The Yukon Gold Company operated seven dredges continuously for a period of 150 days, from 20th May to 17th October.



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## THE CANADIAN KLONDYKE MINING COMPANY, LIMITED.

*Dredging operations.*—This company operated their four dredges.

These dredges are all electrically driven, the power being furnished by the Canadian Klondike Power Company's hydro-electric plant at the North Fork of the Klondike river. This plant, which is under the same management as the Canadian Klondike Mining Company, was kept in operation throughout the entire year.

An average of 200 men was employed in these dredging operations and 5,500,000 cubic yards of material was dredged.

*Hydraulic Operations.*—Extensive hydraulic operations were carried on by the company on their property on Last Chance creek. The Klondike river is the source of their water-supply for these operations, the water being pumped through a ditch four miles long to a pumping plant situated near the mouth of Hunker creek, from where it is pumped to a ditch on the Left Limit of Hunker creek, and there conveyed through another ditch four miles long to Last Chance creek. The pumping equipment consists of a 4-stage Kingsford centrifugal pump, direct-connected to a 1,200-horse-power rotor-wound motor pumping against a 600-foot hydraulic head.

In addition to the men employed by this company in their dredging and hydraulic operations, a considerable force was employed in prospecting with a Keystone drill, in their machine shops, and in procuring wood for their thawing operations.

## NORTH WEST CORPORATION, LIMITED.

This company did not recover any gold during the year, but confined their operations, as already stated, to ground sluicing, 523,300 cubic yards of material being removed from claims situated between Nos. 236 to 276 below Lower Discovery on Dominion creek, and 231,600 cubic yards from their claims on Lower Quartz creek.

## INDIVIDUAL OPERATIONS.

Operations carried on by individuals, or by men in partnership, some of them with quite extensive equipment were on a more extensive scale than in the previous year. Hunker and tributaries had thirty such operators, Dominion, six; Sulphur, fifteen; Quartz, ten; Eureka, eight; Gold Run, three; Clear Creek, four; Scroggie and tributaries, twelve; Barker, three; Thistle, eight; Kirkman, ten; and Ten Mile, five; while the operations of this character in the Glacier and Duncan Mining Districts were about the same as last year.

## LODE MINING.

Of the large number of mineral claims in good standing, only on a very few has any real development work been attempted.

The silver-lead properties in the Duncan district continue to attract the attention of mining experts, and the outlook is, to say the least, most encouraging.

## SCHEELITE.

A discovery of scheelite on Dublin gulch justifies further investigation, especially in view of the high price now paid for this ore. A trial shipment of 350 pounds forwarded to the Munition Resources Commission shows that the ore is high grade, running 69½ per cent tungstic acid, and at the present market price, the net value of the 350 pounds, after the freight charges are paid, is \$255.



REPORT OF CROWN TIMBER AND LAND AGENT, DAWSON, YUKON  
TERRITORY, G. P. MACKENZIE.

There has been a net decrease in revenue of \$1,741.72 in the Timber Branch and \$909.16 in the Lands Branch, compared with the previous fiscal year.

The decrease in revenue in the Timber Branch is accounted for largely by the fact that the amount of coal used was in excess of the previous year, and as a consequence less wood was needed. The revenue from this source, however, although less than in the previous year, was greater than in 1916 and well up to the average for the previous five years.

The slight loss of revenue in the Lands Branch was on account of land rentals and sales.

WOOD AND TIMBER.

One hundred and thirty-nine permits were issued during the year, under authority of which 17,260½ cords of wood and 257,936 feet b.m. of logs were cut; 3,119½ cords of wood and 250,290 feet b.m. of logs were cut under license. Seizure dues were paid on 443¾ cords of wood and 1,778 feet b.m. of logs. The number of cords of wood cut and used for mining purposes during the year is estimated at 30,000.

The Yukon Saw-mill Company operated their mill at Dawson during the summer and continued to carry a well-assorted stock of both native and British Columbia lumber.

The Canadian Klondyke Mining Company's mill at the North Fork of the Klondike river cut most of the lumber required by that company for their mining operations, and one mill at Mayo manufactured sufficient to satisfy the requirements of the Upper Stewart district.

Inspections were made from time to time of the various timber camps, and I am pleased to report that no forest fires of any magnitude occurred during the year.

COAL.

The only coal mine operated was that of the Five Fingers Coal Company, at Tantalus. The coal from this mine continues to improve in quality as a greater depth is reached, and an adequate supply was placed in the bunkers at Dawson.



REPORT OF INSPECTING AND ENGINEERING DIVISION OF THE  
M. L. AND Y. BRANCH, O. S. FINNIE.

The duties of the inspecting engineer are, briefly, to inspect and survey coal mines on Dominion and School Lands with the object of checking the output for royalty purposes and to ascertain whether the operations are being confined to the proper lands. There are 196 coal mines, subject to royalty, operating in Alberta, and 56 in Saskatchewan.

During the year the number of mines inspected were 225; reports made, 472; plans of mines received and examined, 173; plans compiled, 51; new surveys made, 12; extensions of surveys, 39; declarations of output, about 100.

During the year a map of Alberta was prepared and published, indicating the lands disposed of by sale and by lease, both on Dominion and School Lands. It also shows railway lands, Hudson's Bay lands, Dominion Parks and Forest reserves. It is published in two sheets, one from Calgary, south to the boundary, and the other from Calgary, north to township 65. There is no doubt it will be found a very useful and necessary map, particularly to the mining community.

During the year a number of the oil and gas fields were inspected. From Okotoks a considerable quantity of oil was shipped. In the month of June, 1917, these shipments amounted to 550 barrels, and in July to 891 barrels. The total shipments from Okotoks, up to July 31, 1917, were 6,531 barrels, which is equivalent to 276,376 gallons. Further drilling is being done at Bow island, and very promising results are being obtained in the Viking and Peace River districts.



REPORT OF THE CONTROLLER OF THE TIMBER AND GRAZING LANDS  
BRANCH, B. L. YORK.

The total revenue of this branch, derived from timber, grazing and hay lands, during the fiscal year, amounts to \$569,607.39, which is an increase of \$35,225.64 over the preceding year.

At the conclusion of this report will be found statement "A," which sets out the total revenue of the branch from its various sources; statement "B" showing the revenue from timber by agencies; statement "C" other sources of revenue by agencies.

Statements from the Crown Timber Agents at Calgary, Edmonton, Prince Albert, Winnipeg, Kamloops, New Westminster, and Revelstoke, showing the revenue collected on Dominion lands within their respective agencies, and other information, are appended hereto.

The report of the Inspector of Crown Timber Agencies, whose headquarters are at Winnipeg, and the reports of the Inspectors of Ranches located at Calgary, Maple Creek, Moosejaw, and Prince Albert are also attached.

The revenue derived from timber and grazing lands, received at the Crown Timber Agencies above mentioned; also the number of mills operated on timber berths held under license, and the number of portable sawmills in operation, may be summarized as follows:—

| Agency.              | Total Revenue. | No. of mills operating under license. | No. of mills operating under permit. |
|----------------------|----------------|---------------------------------------|--------------------------------------|
|                      | \$ cts.        |                                       |                                      |
| Calgary.....         | 32,666 81      | 13                                    | 14                                   |
| Edmonton.....        | 126,610 80     | 32                                    | 83                                   |
| Prince Albert.....   | 96,705 64      | 27                                    | 34                                   |
| Winnipeg.....        | 64,076 79      | 20                                    | 40                                   |
| Kamloops.....        | 20,412 17      | 5                                     |                                      |
| New Westminster..... | 75,797 52      | 21                                    |                                      |
| Revelstoke.....      | 27,837 90      | 7                                     |                                      |

The returns of operations received from the timber agencies above mentioned show the quantity of timber manufactured under government license during the year, and the quantity sold, as follows:—

|                            | Manufactured | Sold.       |
|----------------------------|--------------|-------------|
| Sawn lumber, feet b.m..... | 272,998,339  | 237,607,059 |
| Shingle bolts.....         | 25,086       | 23,382      |
| Railway ties.....          | 5,041        | 56,538      |
| Laths.....                 | 33,277,860   | 44,347,390  |
| Piling, lineal feet.....   | 59,867       | 61,492      |
| Telegraph poles.....       | 2,728        | 1,140       |
| Cordwood.....              | 531          | 566         |
| Fence posts.....           | 949,550      | 943,550     |



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The following shows the material manufactured on permit and portable sawmill berths, and the quantity sold:—

|                                     | Manufactured. | Sold.      |
|-------------------------------------|---------------|------------|
| Sawn lumber, feet b.m.....          | 33,868,269    | 36,835,018 |
| Shingles.....                       | 314,000       | 1,276,250  |
| Shingle bolts, cords.....           | 11,852        | 11,852     |
| Railway ties.....                   | 36,428        | 36,428     |
| Fence posts.....                    | 182,958       | 182,458    |
| Cordwood.....                       | 7,919         | 8,891      |
| Piling, lineal feet.....            | 8,000         | 8,000      |
| Mining props and mining timber..... | 1,597,966     | 1,712,635  |

The quantity of lumber manufactured and sold within each agency will be found in the agents' reports appended hereto.

The area of timber lands held under license and permit in the provinces of Manitoba, Alberta, and Saskatchewan, and in the Railway Belt in the province of British Columbia, is as follows:—

|                       | Under license. | Under permit. |
|-----------------------|----------------|---------------|
|                       | Square miles   | Square miles  |
| Manitoba.....         | 1,241.00       | 507.83        |
| Alberta.....          | 2,027.59       | 27.92         |
| Saskatchewan.....     | 1,672.20       | 110.74        |
| British Columbia..... | 1,739.78       | 4.51          |
| Totals.....           | 6,680.57       | 651.00        |

During the year 113 berths were granted, of which eight were licensed berths, forty-seven portable sawmill, and fifty-eight cordwood.

## GRAZING.

There were in force on March 31, 1918, 4,796 grazing leases, covering an area of 5,746,178 acres, in the provinces of Manitoba, Alberta, Saskatchewan, and British Columbia, as follows:—

|                            | Acres.    |
|----------------------------|-----------|
| Manitoba.. . . . .         | 66,563    |
| Alberta.. . . . .          | 2,563,145 |
| Saskatchewan.. . . . .     | 2,723,217 |
| British Columbia.. . . . . | 393,253   |

This is an increase of 56,714 acres over the previous year. During the year there were 708 new leases issued.

## STATEMENT "A."—Statement of Revenue for Fiscal Year 1917-18.

|                    |            |
|--------------------|------------|
| Timber.....        | 426,293 79 |
| Grazing.....       | 116,605 11 |
| Hay.....           | 8,003 00   |
| Registration.....  | 184 86     |
| Fire tax.....      | 15,502 45  |
| Improvements.....  | 1,192 60   |
| Scaling books..... | 47 50      |
| Scaling Fees.....  | 1,778 08   |
| Total.....         | 569,607 39 |



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## STATEMENT "B."—Statement of Revenue from Timber for Fiscal Year 1917-18.

|                                   |            |
|-----------------------------------|------------|
| Bonus under license.....          | 30,376 53  |
| Rental under license.....         | 47,932 67  |
| Royalty under license.....        | 164,177 67 |
| Permit fees, dues and rental..... | 136,094 58 |
| Seizure.....                      | 47,712 34  |
| Scaling books.....                | 47 50      |
| Scaling fees.....                 | 1,778 08   |
| Total.....                        | 428,119 37 |

## STATEMENT "C."—Statement of Revenue from Grazing, Hay, Registration Fees, Fireguarding Dues, and Improvements, for Fiscal Year 1917-18.

|                        |               |
|------------------------|---------------|
| Grazing.....           | \$ 116,605 11 |
| Hay.....               | 8,003 00      |
| Registration fees..... | 184 86        |
| Fire tax.....          | \$ 1,602 29   |
| “ “ head office.....   | 13,899 50     |
|                        | <hr/>         |
|                        | 15,502 45     |
| Improvements.....      | 1,192 60      |
|                        | <hr/>         |
| Total.....             | \$ 141,488 02 |



CHIEF INSPECTOR OF DOMINION CROWN TIMBER OFFICES, E. F. STEPHENSON.

STATEMENT "A."—Summary of Work performed and Revenue collected at the respective Crown Timber Offices during the year ended March 31, 1918.

| Agency.              | Timber and Grazing. |              |                   |                        |                  |              |                  | Forestry. |                          |           |                  |              | School Lands.   |              |                  |           |           | Revenue.   |
|----------------------|---------------------|--------------|-------------------|------------------------|------------------|--------------|------------------|-----------|--------------------------|-----------|------------------|--------------|-----------------|--------------|------------------|-----------|-----------|------------|
|                      | Bonus.              | Ground Rent. | Royalty on Sales. | Timber Permits Issued. | Timber Seizures. | Hay Permits. | Grazing Rentals. | Sundries. | Permit Dues and Rentals. | Seizures. | Grazing Rentals. | Hay Permits. | Timber Permits. | Hay Permits. | Grazing Permits. | Seizures. | Sundries. |            |
| Battleford.....      |                     |              |                   | 178                    | 5                | 309          | 432              | 9         | 241                      |           | 86               | 24           | 1               | 526          | 293              |           | 9         | 9,153 59   |
| Calgary.....         |                     | 36           | 39                | 97                     | 4                | 37           | 480              | 1         | 84                       | 3         | 62               | 15           | 1               | 517          | 391              | 1         |           | 46,633 19  |
| Dauphin.....         |                     |              |                   | 471                    | 24               | 241          | 51               |           | 1,735                    | 79        | 28               | 251          | 3               | 228          | 43               | 2         |           | 20,389 16  |
| Edmonton.....        | 4                   | 43           | 43                | 1,509                  | 131              | 527          | 166              | 564       | 93                       | 12        | 16               | 39           | 59              | 474          | 318              |           | 87        | 137,267 40 |
| Grande Prairie.....  |                     |              |                   | 365                    |                  | 298          | 64               | 93        |                          |           |                  |              |                 | 49           | 64               |           |           | 3,273 30   |
| High Prairie.....    |                     |              |                   | 42                     |                  | 44           | 21               | 12        | 1                        |           |                  |              |                 | 7            | 14               |           |           | 755 68     |
| Humboldt.....        |                     |              |                   | 83                     | 4                | 170          | 66               | 8         |                          |           |                  |              | 9               | 398          | 178              | 1         | 14        | 3,322 92   |
| Kamloops.....        | 2                   | 51           | 24                | 314                    | 10               | 9            | 452              | 25        | 35                       | 3         | 8                | 12           |                 |              |                  |           |           | 20,664 71  |
| Lethbridge.....      |                     |              |                   | 28                     |                  | 4            | 296              | 10        | 162                      | 4         | 62               | 8            |                 | 46           | 164              |           | 1         | 11,290 16  |
| Maple Creek.....     |                     |              |                   | 42                     | 1                | 231          | 1,110            | 8         | 204                      | 2         | 72               |              |                 | 412          | 241              |           | 9         | 24,651 79  |
| Medicine Hat.....    |                     |              |                   | 6                      |                  | 95           | 901              | 3         | 147                      |           |                  | 65           |                 | 91           | 187              |           | 1         | 24,923 24  |
| Moose Jaw.....       |                     |              |                   | 7                      | 1                | 53           | 530              | 1         | 146                      | 12        | 70               | 71           | 3               | 880          | 653              |           |           | 15,235 62  |
| New Westminster..... | 2                   | 173          | 142               | 110                    | 10               |              | 1                | 127       |                          |           |                  |              |                 |              |                  |           |           | 75,083 28  |
| Peace River.....     |                     |              |                   | 309                    |                  | 131          | 73               |           |                          |           |                  |              |                 | 28           | 10               |           |           | 2,067 38   |
| Prince Albert.....   | 1                   | 16           | 54                | 538                    | 21               | 367          | 244              | 1         | 435                      | 17        | 22               | 90           | 29              | 307          | 124              |           |           | 103,536 50 |
| Red Deer.....        |                     |              |                   | 104                    | 7                | 76           | 153              | 1         | 34                       |           | 5                | 3            | 2               | 360          | 251              |           |           | 6,754 00   |
| Revelstoke.....      | 5                   | 75           | 28                | 86                     | 3                |              | 1                | 5         |                          |           |                  |              |                 |              |                  |           |           | 27,715 32  |
| Saskatoon.....       |                     |              |                   | 20                     |                  | 80           | 102              | 6         | 58                       | 1         | 26               | 14           | 3               | 567          | 405              |           | 24        | 8,174 83   |
| Swift Current.....   |                     |              |                   | 4                      |                  | 63           | 419              |           | 1                        | 1         | 18               | 10           |                 | 451          | 384              |           | 6         | 11,448 26  |
| The Pas.....         |                     |              |                   | 38                     | 1                | 15           |                  | 2         |                          |           |                  |              |                 | 2            |                  |           |           | 1,372 60   |
| Yorkton.....         |                     |              |                   | 20                     |                  | 71           | 12               |           | 213                      | 5         | 14               | 74           | 1               | 239          | 96               |           | 1         | 3,109 39   |
| Weyburn.....         |                     |              |                   |                        |                  | 107          | 151              |           |                          |           | 4                | 37           | 3               | 412          | 121              |           |           | 3,787 59   |
| Winnipeg.....        |                     | 97           | 40                | 1,639                  | 58               | 783          |                  | 145       | 138                      |           | 140              | 95           | 94              | 725          |                  | 9         |           | 69,658 34  |
| Total.....           | 14                  | 491          | 372               | 6,010                  | 280              | 3,711        | 5,725            | 1,021     | 3,727                    | 139       | 633              | 810          | 208             | 6,719        | 3,937            | 13        | 152       | 630,268 25 |
| Previous year.....   | 7                   | 516          | 419               | 6,196                  | 295              | 3,834        | 5,254            | 887       | 3,120                    | 137       | 567              | 716          | 181             | 6,733        | 3,813            | 12        | 136       | 545,033 41 |

N.B.—(Revenue exclusive of payments made to the Department on account of the respective Agencies.)



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STATEMENT "B," showing Manufacture and Sale of Timber Products Cut by Holders  
Year ended

## Timber Cut under Permit for Commercial

| Agency.              | Lumber Feet, B.M. |             |             | Lath.        |            |
|----------------------|-------------------|-------------|-------------|--------------|------------|
|                      | Manufactu'd       | Marketed.   | On Hand.    | Manufactu'd. | Sold.      |
| Calgary.....         | 14,050,969        | 18,949,459  | 2,915,464   |              |            |
| Edmonton.....        | 27,503,467        | 26,075,785  | 6,159,337   | 3,488,400    | 3,438,650  |
| Kamloops.....        | 20,234,411        | 20,234,411  | Not known.  |              |            |
| New Westminster..... | 57,698,754        | 57,698,754  | Not known.  |              |            |
| Prince Albert.....   | 112,506,042       | 116,410,377 | 29,324,281  | 24,288,450   | 35,260,600 |
| Revelstoke.....      | 22,559,366        | 22,559,366  | Not known.  |              |            |
| Winnipeg.....        | 18,445,330        | 18,472,684  | 4,952,993   | 5,134,960    | 4,628,590  |
| Total.....           | 272,998,339       | 280,400,836 | 43,352,075  | 32,911,810   | 43,327,840 |
| Calgary.....         | 2,857,364         | 3,211,399   | 419,683     |              |            |
| Edmonton.....        | 12,882,204        | 14,858,451  | 3,201,180   |              |            |
| Kamloops.....        | 5,000,000         | 5,000,000   | Not known.  |              |            |
| New Westminster..... | 11,797,462        | 11,797,462  | Not known.  |              |            |
| Prince Albert.....   | 1,561,029         | 1,271,492   | 923,811     |              |            |
| Revelstoke.....      | 357,000           | 357,000     | Not known.  |              |            |
| Winnipeg.....        | 1,934,977         | 3,165,165   | 10,053,623  |              |            |
| Total.....           | 36,390,036        | 39,660,969  | 14,598,297  |              |            |
| Grand total.....     | 309,388,375       | 317,061,805 | 57,950,372  | 32,911,810   | 43,327,840 |
| Previous year.....   | 309,880,991       | 319,387,112 | 100,333,765 | 46,725,174   | 42,435,884 |



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of Timber Berths on Dominion Lands Cut under Yearly License during the Fiscal March 31, 1918.

Purposes during the same Period.

|            | Railway<br>Ties. | Shingles.                  |                  | Piling and<br>Mining<br>Props. | Saw Logs.   |                         |           | Fence<br>Posts.                              |
|------------|------------------|----------------------------|------------------|--------------------------------|-------------|-------------------------|-----------|--|
| On Hand.   |                  | Manu-<br>factured<br>Sold. | Bolts,<br>Cords. | Sold,<br>Lineal<br>Feet.       | Pieces Cut. | Manu-<br>fac-<br>tured. | On Hand.  |  |
| .....      | 38,295           | .....                      | .....            | .....                          | 350,246     | 267,716                 | 476,349   | .....  |
| 330,450    | 12,660           | .....                      | .....            | 1,194                          | 520,638     | 453,157                 | 337,119   | .....  |
| .....      | 1,276            | .....                      | 505              | 2,440                          | 179,456     | 179,456                 | .....     | 60,793                                       |
| .....      | 2,200            | 23,135                     | 23,135           | 2,985                          | 76,260      | 76,913                  | 3,900     | .....  |
| 5,431,200  | 3,343            | .....                      | .....            | .....                          | 1,688,802   | 1,849,283               | 1,874,716 | .....  |
| .....      | .....            | .....                      | 1,446            | 57,787                         | 233,419     | Not known.              | .....     | 888,757                                      |
| 2,251,362  | 540              | .....                      | .....            | .....                          | 470,065     | 404,246                 | 432,107   | .....  |
| 8,013,012  | 58,314           | 23,135                     | 25,086           | 64,406                         | 3,518,886   | 3,230,771               | 3,124,191 | 949,550                                      |
| .....      | .....            | .....                      | .....            | 1,740,199                      | 109,793     | 139,189                 | 36,756    | .....  |
| .....      | .....            | 1,276,250                  | .....            | 457,644                        | 227,781     | 192,532                 | 112,849   | 19,758                                       |
| .....      | 12,220           | .....                      | 268              | 18,000                         | Not known.  | .....                   | .....     | .....  |
| .....      | 19,521           | 11,682                     | 11,682           | .....                          | Not known.  | .....                   | .....     | .....  |
| .....      | .....            | .....                      | .....            | .....                          | 73,439      | 33,343                  | 52,954    | .....  |
| .....      | 1,100            | .....                      | 170              | .....                          | .....       | .....                   | .....     | 163,240<br>and<br>1,968<br>Cords of<br>Wood. |
| .....      | 3,587            | .....                      | .....            | .....                          | 16,792      | 43,318                  | 13,609    | .....  |
| .....      | 36,428           | 1,276,250                  | 12,120           | 2,209,843                      | 427,805     | 410,382                 | 216,168   | 182,958<br>and<br>1,968<br>Cords of<br>Wood. |
| .....      | .....            | 11,682                     | .....            | .....                          | .....       | .....                   | .....     | .....  |
| 8,013,012  | 1,370,992        | 34,817                     | 37,206           | 2,274,249                      | 3,946,685   | 3,641,153               | 3,340,359 | 1,132,508                                    |
| 18,814,602 | 307,009          | 901,000                    | 62,191           | 117,345                        | 2,522,679   | 3,958,756               | 3,378,894 | 1,163,324                                    |



STATEMENT "C."—Timber Material covered by Permits issued at the respective Agencies, principally to Homestead Settlers, during the year ended March 31, 1918.

| Agency.               | Lumber<br>and<br>Logs<br>Feet<br>B.M. | Fence Rails. | Poles.  | Fence Posts | Cords<br>Cord-<br>Wood. | Rail-<br>way<br>Ties. | Telegraph<br>and<br>Telephone<br>Poles. | Round<br>Timber. | Cords<br>Shingle<br>Bolts. |
|-----------------------|---------------------------------------|--------------|---------|-------------|-------------------------|-----------------------|---|------------------|----------------------------|
| Battleford .....      | 1,062,302                             | 18,910       | 2,816   | 20,270      | 2,564                   |                       |   |                  |                            |
| Calgary .....         | 666,967                               | 28,498       | 3,450   | 50,875      | 2,567                   |                       | 540                                     | 1,096,000        |                            |
| Dauphin .....         | 7,137,311                             | 10,125       | 250     | 84,712      | 13,881                  |                       |   |                  |                            |
| Edmonton .....        | 8,007,364                             | 933,626      | 188,235 | 279,261     | 7,682                   | 128,092               | 280                                     | 2,572,456        |                            |
| Grande Prairie .....  | 2,366,421                             | 495,028      | 94,457  | 113,447     | 30                      |                       |   |                  |                            |
| High Prairie .....    | 432,303                               | 47,750       | 8,920   | 16,000      | 567                     |                       |   |                  |                            |
| Humboldt .....        | 322,864                               | 3,200        | 1,100   | 3,450       | 196                     |                       |   |                  |                            |
| Kamloops .....        | 5,614,052                             | 11,100       | 3,535   | 359,453     | 5,664                   | 12,220                | 21,240                                  | 18,000           | 268                        |
| Lethbridge .....      | 140,096                               | 28,148       | 950     | 22,215      | 2,827                   |                       |   | 90,800           |                            |
| *Maple Creek .....    |                                       |              |         |             |                         |                       |   |                  |                            |
| †Medicine Hat .....   |                                       |              |         |             |                         |                       |   |                  |                            |
| Moosejaw .....        |                                       | 1,275        |         | 2,475       | 476                     |                       |   |                  |                            |
| New Westminster ..... | 11,797,462                            |              |         |             | 212                     | 19,521                |   |                  | 11,682                     |
| Peace River .....     | 1,497,158                             | 301,260      | 99,213  | 90,720      | 1,470                   |                       |   |                  |                            |
| Prince Albert .....   | 6,552,832                             | 378,979      | 72,744  | 138,673     | 22,870                  | 49,975                |   |                  |                            |
| Red Deer .....        | 151,200                               | 10,800       | 900     | 30,100      | 1,820                   |                       |   | 69,000           |                            |
| Revelstoke .....      | 367,500                               | 700          |         |             |                         |                       |   |                  |                            |
| Saskatoon .....       | 136,750                               | 4,075        | 800     | 3,900       | 562                     |                       |   |                  |                            |
| Swift Current .....   |                                       |              | 150     | 600         | 20                      |                       |   |                  |                            |
| The Pas .....         | 150,530                               |              | 10,500  |             | 4,816                   |                       |   |                  |                            |
| Yorkton .....         | 1,113,140                             | 16,500       |         | 16,500      | 950                     |                       |   |                  |                            |
| *Weyburn .....        |                                       |              |         |             |                         |                       |   |                  |                            |
| Winnipeg .....        | 4,810,713                             | 59,790       | 21,214  | 146,900     | 86,408                  | 76,700                | 10,500                                  | 282,800 ††       | 2,105                      |
| Total .....           | 52,326,965                            | 2,369,764    | 511,234 | 1,379,551   | 155,682                 | 286,508               | 32,560                                  | 4,129,056        | 14,055                     |
| Previous year .....   | 59,493,180                            | 4,002,856    | 689,961 | 1,694,874   | 182,221                 | 1,141,713             | 12,335                                  | 13,666,845       | 26,697                     |

\*(Office closed, information cannot be obtained.)  
†(Included in Lethbridge).  
‡(Office closed, information cannot be obtained.)  
††Pulpwood Cords..



## SESSIONAL PAPER No. 25

STATEMENT "D," showing the number of Hay Permits issued at the respective Crown Timber Offices and the amount of hay covered thereby for the year ended March 31, 1918.

| Agency.              | Dominion Lands         |              | School Lands.          |              | Forestry Lands.        |              | Revenue.  |
|----------------------|------------------------|--------------|------------------------|--------------|------------------------|--------------|-----------|
|                      | Number Permits Issued. | Tons of Hay. | Number Permits Issued. | Tons of Hay. | Number Permits Issued. | Tons of Hay. |           |
|                      |                        |              |                        |              |                        |              | \$ cts.   |
| Battleford.....      | 359                    | 6,255        | 526                    | 7,869        | 24                     | 862          | 2,187 85  |
| Calgary.....         | 37                     | 833          | 517                    | 13,122       | 15                     | 445          | 7,300 02  |
| Dauphin.....         | 241                    | 4,322        | 228                    | 2,553        | 251                    | 3,887        | 1,528 35  |
| Edmonton.....        | 627                    | 5,066        | 474                    | 5,186        | 37                     | 1,749        | 1,980 14  |
| Grande Prairie.....  | 298                    | 5,277        | 49                     | 614          |                        |              | 726 20    |
| High Prairie.....    | 44                     | 1,254        | 7                      | 105          | 2                      | 10           | 211 85    |
| Humboldt.....        | 172                    | 2,200        | 432                    | 5,600        |                        |              | 1,077 65  |
| Kamloops.....        | 9                      | 68           |                        |              | 11                     | 102          | 24 65     |
| Lethbridge.....      | 97                     | 3,397        | 135                    | 1,640        | 73                     | 2,827        | 575 50    |
| Maple Creek.....     | 231                    | 1,840        | 412                    | 6,513        | 78                     | 2,681        |           |
| *Medicine Hat.....   |                        |              |                        |              |                        |              |           |
| Moosejaw.....        | 53                     | 1,232        | 880                    | 12,880       | 71                     | 2,765        | 2,353 40  |
| New Westminster..... |                        |              |                        |              |                        |              |           |
| Peace River.....     | 131                    | 1,687        | 28                     | 310          |                        |              | 400 64    |
| Prince Albert.....   | 367                    | 4,271        | 307                    | 3,271        | 90                     | 2,494        | 1,522 85  |
| Red Deer.....        | 72                     | 3,179        | 367                    | 11,888       | 3                      | 170          | 1,235 08  |
| Revelstoke.....      |                        |              |                        |              |                        |              |           |
| Saskatoon.....       | 82                     | 1,535        | 568                    | 11,750       | 11                     | 227          | 1,731 95  |
| Swift Current.....   | 63                     | 1,415        | 451                    | 7,351        | 10                     | 575          | 894 05    |
| The Pas.....         | 15                     | 283          | 2                      | 75           |                        |              | 44 30     |
| Yorkton.....         | 71                     | 1,248        | 239                    | 2,581        | 74                     | 2,890        | 1,007 15  |
| †Weyburn.....        |                        |              |                        |              |                        |              | 1,213 25  |
| Winnipeg.....        | 775                    | 11,299       | 707                    | 10,004       | 95                     | 1,597        | 3,094 60  |
| Total.....           | 3,734                  | 56,661       | 6,329                  | 103,312      | 845                    | 23,281       | 29,109 48 |
| Previous year.....   | 3,834                  | 62,689       | 6,676                  | 108,227      | 625                    | 17,953       | 22,897 19 |

\*Included in statement Lethbridge Office.

†Office closed. Particulars cannot be obtained.

## SCHOOL LANDS DIVISION, W. T. ROLLINS.

By the terms of an Order in Council dated the 8th of March, 1918, that portion of an Order in Council of the 25th January, 1913, making the School Lands Branch a separate branch of the Department of the Interior was rescinded, and the administration of School Lands was transferred to the Dominion Lands Branch for the purpose of consolidation, with a view to economy and in the interests of the public service.

A comparison of the business transacted by the School Lands Division for the present fiscal year with that of the previous year, as shown by the annual reports, shows a very substantial increase in the revenue derived for each of the three provinces; also an exceptionally large increase in the work performed.

*Sales.*—Sales of school lands were held at Beauséjour, Teulon, Swan River, and Birtle, in the province of Manitoba; at Windthorst, Nokomis, Young, Morse, Brownlee, Maple Creek, Gull Lake, Shaunavon, and Oxbow, in the province of Saskatchewan; and at Coronation, Castor, Drumheller, Hanna, and Three Hills, in the province of Alberta, during the months of October and November, 1917.



9 GEORGE V, A. 1919

In the province of Manitoba, 16,037.83 acres were disposed of for \$182,624.61, an average of \$11.39 per acre.

In the province of Saskatchewan, 214,550.40 acres were disposed of for \$4,151,374.29, an average of \$19.35 per acre.

In the province of Alberta, 96,400.35 acres were disposed of for \$1,860,090.15, an average of \$19.30 per acre.

A number of lots in a subdivision of the townsite of Drumheller, Alta., were also disposed of for \$39,935.

The total area disposed of in each province for the year, including areas sold to railway companies, and for school sites, was as follows:—

| Province—              | Area Sold. | Amount Realized. |
|------------------------|------------|------------------|
| Manitoba.. . . . .     | 16,072.97  | \$ 182,981 59    |
| Saskatchewan.. . . . . | 214,743.13 | 4,154,276 17     |
| Alberta .. . . . .     | 96,859.73  | 1,906,281 89     |

After making the necessary adjustments on account of cancellations, etc., the approximate net area sold in each province to March 31, 1918, was as follows:—

| Province—              | Area Sold. | Amount Realized. | Average. |
|------------------------|------------|------------------|----------|
| Manitoba.. . . . .     | 686,693.75 | \$ 6,673,374 00  | \$ 9 71  |
| Saskatchewan.. . . . . | 921,662.85 | 14,318,896 33    | 15 54    |
| Alberta.. . . . .      | 795,349.81 | 10,353,891 55    | 13 02    |

Down to the same date the amount realized from sales of town lots was as follows: Manitoba, \$5,388; Saskatchewan, \$16,463; Alberta, \$39,935.

*Grazing.*—During the fiscal year, 6,731 grazing permits were issued as follows: Manitoba, 132; Saskatchewan, 4,715; Alberta, 1,884. The total revenue derived from this source was \$89,201.26.

*Coal.*—Leases issued during year, 15; leases in force, 120; total revenue produced for the three provinces, \$39,222.60.

*Petroleum and Gas.*—Leases issued during year, 71; leases in force, 1,081; total revenue derived from this source for the three provinces, \$7,925.86.

*Hay.*—During the year 6 leases and 6,630 permits were issued for the three provinces; total revenue derived from this source was \$10,304.78.

*Timber.*—In the three provinces 193 permits were issued during the year, producing a revenue of \$5,202.17.

*Cultivation.*—Permits issued in the three provinces, 47; revenue derived from this source, \$1,217.05.

Statements herewith lettered A, B, and C, respectively, show the revenue collected from School Lands in the three provinces, as classified.

The total net revenues from each province during the fiscal year was as follows:—

|                        |                       |
|------------------------|-----------------------|
| Manitoba.. . . . .     | \$ 365,751 66         |
| Saskatchewan.. . . . . | 1,418,715 68          |
| Alberta.. . . . .      | 1,042,359 36          |
| Total.. . . . .        | <u>\$2,826,826 70</u> |

As provided by the several Orders in Council in that behalf, the revenue collected from School Lands in each province during the fiscal year, less principal moneys of sales, and less, also, the expenditure, was paid over to the Government of each province. The amounts paid were as follows:—

|   |                     |
|---|---------------------|
| Manitoba—                                     |                     |
| Revenue other than principal moneys.. . . . . | \$115,775 08        |
| Less expenditure.. . . . .                    | 14,690 48           |
| Amount paid to province.. . . . .             | <u>\$101,084 60</u> |



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## Saskatchewan—

|   |              |
|---|--------------|
| Revenue other than principal moneys.. . . . | \$343,352 78 |
| Less expenditure.. . . .                    | 17,342 87    |
| Amount paid to province.. . . .             | 326,009 91   |

## Alberta—

|   |              |
|---|--------------|
| Revenue other than principal moneys.. . . . | \$311,151 84 |
| Less expenditure.. . . .                    | 16,898 03    |
| Amount paid to province.. . . .             | \$294,253 81 |

In addition to the foregoing the following amounts were paid to the Provincial Governments, as interest on School Lands' fund for fiscal year, viz:—

|                      |             |
|----------------------|-------------|
| Manitoba.. . . .     | \$ 3,415 35 |
| Saskatchewan.. . . . | 16,735 61   |
| Alberta.. . . .      | 12,675 11   |
| Total.. . . .        | \$32,826 07 |

The total amount paid to each province for the fiscal year was as follows:—

|                      |              |
|----------------------|--------------|
| Manitoba .. . . .    | \$104,499 95 |
| Saskatchewan.. . . . | 342,745 52   |
| Alberta.. . . .      | 306,928 92   |
| Total.. . . .        | \$754,174 39 |

The total expenditure for the fiscal year was as follows:—

|                      |             |
|----------------------|-------------|
| Manitoba.. . . .     | \$14,690 48 |
| Saskatchewan.. . . . | 17,342 87   |
| Alberta.. . . .      | 16,898 03   |
| Total.. . . .        | \$48,931 38 |

Statements herewith lettered D, E, and F, respectively, show the balance standing to the credit of the School Lands' funds for each province on March 31, 1918, after deducting amounts invested in Dominion of Canada Debenture Stock as provided by Order in Council of the 7th June, 1917, viz:—

## Manitoba—

|  |                |
|--|----------------|
| Total amount to credit of fund.. . . .     | \$4,318,326 95 |
| Amount invested in debenture stock.. . . . | 4,068,000 00   |
| Balance to credit of fund .. . . .         | \$250,326 95   |

## Saskatchewan—

|  |                |
|--|----------------|
| Total amount to credit of fund.. . . .     | \$4,966,706 11 |
| Amount invested in debenture stock.. . . . | 3,891,000 00   |
| Balance to credit of fund.. . . .          | \$1,075,706 11 |

## Alberta—

|  |                |
|--|----------------|
| Total amount to credit of fund.. . . .     | \$3,830,429 53 |
| Amount invested in debenture stock.. . . . | 3,099,000 00   |
| Balance to credit of fund.. . . .          | \$731,429 53   |

The following is an approximate statement of work performed by this Division of the Dominion Lands' Branch during the fiscal year, viz:—

|   |       |
|---|-------|
| Leases prepared.. . . .                   | 92    |
| Grazing permits issued.. . . .            | 6,547 |
| Cultivation permits issued.. . . .        | 47    |
| Assignments registered.. . . .            | 568   |
| Requisitions for patents prepared.. . . . | 496   |
| “ “ refunds prepared.. . . .              | 535   |



MANITOBA SCHOOL LANDS.

A.—STATEMENT of revenue collected from school lands for fiscal year from April 1, 1917, to March 31, 1918, both dates inclusive.

|   | Sales.     |            | Total.     | Cultiva-<br>tion. | Timber.  | Hay.     | Grazing. | Coal.   | Petro-<br>leum. | Miscel-<br>laneous. | Regis-<br>tration<br>Fees. | Total.     |
|---|------------|------------|------------|-------------------|----------|----------|----------|---------|-----------------|---------------------|----------------------------|------------|
|   | Principal. | Interest.  |            |                   |          |          |          |         |                 |                     |                            |            |
|   | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.           | \$ cts.  | \$ cts.  | \$ cts.  | \$ cts. | \$ cts.         | \$ cts.             | \$ cts.                    | \$ cts.    |
| Total.                                      | 249,983 64 | 109,389 10 | 359,372 74 | 209 30            | 2,375 15 | 1,875 28 | 2,648 53 | 5 00    |                 | 4 00                | 226 50                     | 366,490 00 |
| Reg'n fees transf'd from<br>Dom. Lands..... |            |            |            |                   |          |          |          |         |                 |                     |                            | 226 50     |
| Total.                                      | 249,983 64 | 109,389 10 | 359,372 74 | 209 30            | 2,375 15 | 1,875 28 | 2,648 53 | 5 00    |                 | 4 00                | 226 50                     | 366,716 50 |
| Office fees transf'd to Dom.<br>Lands.....  |            |            |            |                   | 23 75    | 464 00   |          |         |                 |                     |                            | 487 75     |
| Total.                                      | 249,983 64 | 109,389 10 | 359,372 74 | 209 30            | 2,351 40 | 1,411 28 | 2,648 53 | 5 00    |                 | 4 00                | 226 50                     | 366,228 75 |
| Refunds.....                                | 7 06       | 86 03      | 93 09      | 3 00              | 117 85   | 133 10   | 130 05   |         |                 |                     |                            | 477 09     |
| Total.....                                  | 249,976 58 | 109,303 07 | 359,279 65 | 206 30            | 2,233 55 | 1,278 18 | 2,518 48 | 5 00    |                 | 4 00                | 226 50                     | 365,751 66 |



SASKATCHEWAN SCHOOL LANDS.

B.—STATEMENT of revenue collected from school lands for fiscal year from April 1, 1917, to March 31, 1918, both dates inclusive.

|  | Sales.       |            | Total.       | Cultiva-<br>tion. | Timber.  | Hay.     | Grazing.  | Coal.    | Petro-<br>leum. | Potash. | Regis-<br>tration<br>Fee. | Total.       |
|--|--------------|------------|--------------|-------------------|----------|----------|-----------|----------|-----------------|---------|---------------------------|--------------|
|  | Principal.   | Interest.  |              |                   |          |          |           |          |                 |         |                           |              |
|  | \$ cts.      | \$ cts.    | \$ cts.      | \$ cts.           | \$ cts.  | \$ cts.  | \$ cts.   | \$ cts.  | \$ cts.         | \$ cts. | \$ cts.                   | \$ cts.      |
| Total.....                                     | 1,077,547 30 | 278,602 56 | 1,356,149 86 | 941 75            | 1,034 72 | 8,776 00 | 56,539 31 | 1,990 38 | 5 00            | 295 00  | 458 07                    | 1,425,732 02 |
| Reg'n fees transferred from<br>Dom. Lands..... |              |            |              |                   |          |          |           |          |                 |         |                           | 458 07       |
| Total.....                                     | 1,077,547 30 | 278,602 56 | 1,356,149 86 | 941 75            | 1,034 72 | 8,776 00 | 56,539 31 | 1,990 38 | 5 00            | 295 00  | 458 07                    | 1,426,190 09 |
| Office fees transferred to<br>Dom. Lands.....  |              |            |              |                   | 9 75     | 2,062 00 |           |          |                 |         |                           | 2,071 75     |
| Total.....                                     | 1,077,547 30 | 278,602 56 | 1,356,149 86 | 941 75            | 1,024 97 | 6,714 00 | 56,539 31 | 1,990 38 | 5 00            | 295 00  | 458 07                    | 1,424,118 34 |
| Refunds.....                                   | 2,184 40     | 454 37     | 2,638 77     | 20 00             |          | 214 60   | 2,510 13  | 19 16    |                 |         |                           | 5,402 66     |
| Total.....                                     | 1,075,362 90 | 278,148 19 | 1,353,511 09 | 921 75            | 1,024 97 | 6,499 40 | 54,029 18 | 1,971 22 | 5 00            | 295 00  | 458 07                    | 1,418,715 68 |



ALBERTA SCHOOL LANDS.

C.—STATEMENT of revenue collected from school lands for fiscal year from April 1, 1917, to March 31, 1918, both dates inclusive.

|  | Sales.     |            | Total.     | Cultiva-<br>tion. | Timber.  | Hay.     | Grazing.  | Coal.     | Petro-<br>leum. | Quarry-<br>ing. | Registra-<br>tion<br>Fees. | Total.       |
|--|------------|------------|------------|-------------------|----------|----------|-----------|-----------|-----------------|-----------------|----------------------------|--------------|
|  | Principal. | Interest.  |            |                   |          |          |           |           |                 |                 |                            |              |
|  | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.           | \$ cts.  | \$ cts.  | \$ cts.   | \$ cts.   | \$ cts.         | \$ cts.         | \$ cts.                    | \$ cts.      |
| Total.....                                     | 731,665 47 | 228,661 30 | 960,326 77 | 89 00             | 1,981 90 | 3,466 80 | 34,445 96 | 37,271 38 | 8,509 00        | 20 00           | 7 25                       | 1,046,118 06 |
| Reg'n fees transferred from<br>Dom. Lands..... |            |            |            |                   |          |          |           |           |                 |                 | 550 50                     | 550 50       |
| Total.....                                     | 731,665 47 | 228,661 30 | 960,326 77 | 89 00             | 1,981 90 | 3,466 80 | 34,445 96 | 37,271 38 | 8,509 00        | 20 00           | 557 75                     | 1,046,668 56 |
| Office fees transferred to<br>Dom. Lands.....  |            |            |            |                   | 14 75    | 784 50   |           |           |                 |                 |                            | 799 25       |
| Total.....                                     | 731,665 47 | 228,661 30 | 960,326 77 | 89 00             | 1,967 15 | 2,682 30 | 34,445 96 | 37,271 38 | 8,509 00        | 20 00           | 557 75                     | 1,045,869 31 |
| Refunds.....                                   | 457 95     | 447 90     | 905 85     |                   | 23 50    | 155 10   | 1,792 36  | 25 00     | 588 14          | 20 00           |                            | 3,509 95     |
| Total.....                                     | 731,207 52 | 228,213 40 | 959,420 92 | 89 00             | 1,943 65 | 2,527 20 | 32,653 60 | 37,246 38 | 7,920 86        |                 | 557 75                     | 1,042,359 36 |



## SESSIONAL PAPER No. 25

## MANITOBA SCHOOL LANDS.

D.—STATEMENT of revenue and expenditure on account of Manitoba school lands for fiscal year ended March 31, 1918.

| Particulars.  | Period.                        | Dr.        | Cr.        |
|---|--------------------------------|------------|------------|
|   |                                | \$ cts.    | \$ cts.    |
| By balance on April 1, 1917.....  | 12 months ended Mar. 31, 1918. |            | 350 37     |
| “ Sales.....  |                                |            | 359,279 65 |
| Cultivation permits, timber dues, grazing rentals, petroleum, and hay leases..... |                                |            | 6,245 51   |
| By Registration fees.....   |                                |            | 226 50     |
| “ Interest on Fund.....   |                                |            | 3,415 35   |
| To Cost of management at Ottawa.....  |                                | 5,808 66   |            |
| “ Salaries, printing, advertising, and general expenses.....                      |                                | 8,881 82   |            |
| “ Revenue and interest paid to Manitoba Government.....                           |                                | 101,084 60 |            |
| “ Interest on fund paid to Manitoba Government.....                               |                                | 3,415 35   |            |
| “ Balance, March 31, 1918.....  |                                | 250,326 95 |            |
|   |                                | 369,517 38 | 369,517 38 |

NOTE.—Balance at credit of Manitoba School Lands Fund on April 1, 1917, was \$4,068,-350.37, of which \$4,068,000 is invested in Dominion of Canada Debenture Stock maturing October 1, 1919, at 5 per cent per annum, as per Order in Council of June 7, 1917.

## SASKATCHEWAN SCHOOL LANDS.

E.—STATEMENT of revenue and expenditure on account of Saskatchewan school lands for fiscal year ended March 31, 1918.

| Particulars.   | Period.                        | Dr.          | Cr.          |
|--|--------------------------------|--------------|--------------|
|  |                                | \$ cts.      | \$ cts.      |
| By Balance on April 1, 1917.....   | 12 months ended Mar. 31, 1918. |              | 343 21       |
| “ Sales.....   |                                |              | 1,353,511 09 |
| “ Cultivation permits, timber dues, grazing rentals, petroleum and hay leases..... |                                |              | 64,746 52    |
| “ Registration fees.....   |                                |              | 458 07       |
| “ Interest on fund.....  |                                |              | 16,735 61    |
| To Cost of management at Ottawa.....   |                                | 5,808 66     |              |
| “ Salaries, printing, advertising, and general expenses.....                       |                                | 11,534 21    |              |
| “ Revenue and interest paid to Saskatchewan Government.....                        |                                | 326,009 91   |              |
| “ Interest on fund paid to Saskatchewan Government.....                            |                                | 16,735 61    |              |
| “ Balance on March 31, 1918.....   |                                | 1,075,706 11 |              |
|  |                                | 1,435,794 50 | 1,435,794 50 |

NOTE.—Balance at credit of Saskatchewan School Lands Fund on April 1, 1917, was \$3,891,343.21, of which \$3,891,000 is invested in Dominion of Canada Debenture Stock maturing October 1, 1919, at 5 per cent per annum, as per Order in Council of June 7, 1917.



ALBERTA SCHOOL LANDS.

F.—STATEMENT of revenue and expenditure on account of Alberta school lands for fiscal year ended March 31, 1918.

| Particulars.   | Period.                        | Dr.          | Cr.          |
|--|--------------------------------|--------------|--------------|
|  |                                | \$ cts.      | \$ cts.      |
| By Balance on April 1, 1917.....                           |                                |              | 222 01       |
| " Sales.....   | 12 months ended Mar. 31, 1918. |              | 959,420 92   |
| " Cultivation permits, grazing rentals, and petroleum..... | " "                            |              | 82,380 69    |
| " Registration fees.....                                   | " "                            |              | 557 75       |
| " Interest on fund.....                                    | " "                            |              | 12,675 11    |
| To Cost of management at Ottawa.....                       | " "                            | 5,808 66     |              |
| " Salaries, printing and general expenses.....             | " "                            | 11,089 37    |              |
| " Revenue and interest paid to Alberta Government.....     | " "                            | 294,253 81   |              |
| " Interest on fund paid to Alberta Government.....         | " "                            | 12,675 11    |              |
| " Balance on March 31, 1918.....                           | " "                            | 731,429 53   |              |
|  |                                | 1,055,256 48 | 1,055,256 48 |

NOTE.—Balance at credit of Alberta School Lands Fund on April 1, 1917, was \$3,099,222.01, of which \$3,099,000 is invested in Dominion of Canada Debenture Stock maturing October 1, 1919, at 5 per cent per annum, as per Order in Council of June 7, 1917.

LAND PATENTS BRANCH.

Report of N. O. Coté, Controllor of Land Patents Branch of the Department of the Interior for the fiscal year ended March 31, 1918, with statements in relation thereto, marked A to I, inclusive

LETTERS PATENT.

The number of letters patent issued during the period mentioned was 23,227, covering an area of 3,721,632 acres, which may be classified as follows:—

| Province.                       | Patents. | Acres     |
|---------------------------------|----------|-----------|
| Manitoba.. . . . .              | 1,371    | 214,996   |
| Saskatchewan.. . . . .          | 12,765   | 2,053,639 |
| Alberta.. . . . .               | 8,819    | 1,420,335 |
| British Columbia.. . . . .      | 261      | 32,469    |
| Yukon Territory.. . . . .       | 8        | 172       |
| Northwest Territories.. . . . . | 3        | 21        |
|                                 | 23,227   | 3,721,632 |

These grants, which are given in detail in the statements marked A to G, inclusive, may be summarized as follows:—

| Grants.                          | Patents. | Acres.    |
|----------------------------------|----------|-----------|
| Homesteads.. . . . .             | 14,544   | 2,333,478 |
| Sales.. . . . .                  | 1,020    | 146,827   |
| Pre-emption sales.. . . . .      | 6,138    | 976,395   |
| Purchased homesteads.. . . . .   | 876      | 137,253   |
| Railways.. . . . .               | 508      | 122,296   |
| Special or free grants.. . . . . | 67       | 4,255     |
| Northwest half-breeds.. . . . .  | 5        | 797       |
| Licenses of occupation.. . . . . | 44       | 331       |
| Quit claims.. . . . .            | 25       | —         |
|                                  | 23,227   | 3,721,632 |



## SESSIONAL PAPER No. 25

There was an increase of 4,453 patents and 702,454 acres, as compared with the preceding year.

There are recorded in the Land Patents Branch 380,726 letters patent, aggregating 88,980,712 acres, which have been issued since May, 1873, to March 31, 1918.

## LANDS DISPOSED OF.

Nine thousand two hundred and seventy-seven entries were granted during the year, aggregating an approximate area of 1,484,320 acres, made up as follows:—

| Homestead Entries—         |       | Acres. |           |
|----------------------------|-------|--------|-----------|
| Manitoba.. . . . .         | 1,593 |        |           |
| Saskatchewan.. . . . .     | 2,741 |        |           |
| Alberta.. . . . .          | 3,808 |        |           |
| British Columbia.. . . . . | 177   |        |           |
|                            | <hr/> | 8,319  | 1,331,040 |
| Pre-emption Entries—       |       |        |           |
| Saskatchewan.. . . . .     | 547   |        |           |
| Alberta.. . . . .          | 220   |        |           |
|                            | <hr/> | 767    | 122,720   |
| Purchased homesteads—      |       |        |           |
| Saskatchewan.. . . . .     | 124   |        |           |
| Alberta.. . . . .          | 67    |        |           |
|                            | <hr/> | 191    | 30,560    |
|                            |       | <hr/>  | <hr/>     |
|                            |       | 9,277  | 1,484,320 |
|                            |       | <hr/>  | <hr/>     |

There was a decrease in the number of homestead entries granted, as compared with the previous year, of 2,880 entries.

By land agencies, the 8,319 homestead entries were made up as follows:—

|                           |       |       |
|---------------------------|-------|-------|
| Manitoba—                 |       |       |
| Dauphin.. . . . .         | 725   |       |
| Winnipeg.. . . . .        | 868   |       |
|                           | <hr/> | 1,593 |
| Saskatchewan—             |       |       |
| Battleford.. . . . .      | 363   |       |
| Humboldt.. . . . .        | 279   |       |
| Maple Creek.. . . . .     | 300   |       |
| Moosejaw.. . . . .        | 421   |       |
| Prince Albert.. . . . .   | 558   |       |
| Saskatoon.. . . . .       | 225   |       |
| Swift Current.. . . . .   | 320   |       |
| Weyburn.. . . . .         | 137   |       |
| Yorkton.. . . . .         | 138   |       |
|                           | <hr/> | 2,741 |
| Alberta—                  |       |       |
| Calgary.. . . . .         | 291   |       |
| Edmonton.. . . . .        | 1,536 |       |
| Grande Prairie.. . . . .  | 886   |       |
| High Prairie.. . . . .    | 116   |       |
| Lethbridge.. . . . .      | 92    |       |
| Medicine Hat.. . . . .    | 270   |       |
| Peace River.. . . . .     | 451   |       |
| Red Deer.. . . . .        | 166   |       |
|                           | <hr/> | 3,808 |
| British Columbia—         |       |       |
| Kamloops.. . . . .        | 127   |       |
| New Westminster.. . . . . | 32    |       |
| Revelstoke.. . . . .      | 18    |       |
|                           | <hr/> | 177   |
|                           | <hr/> | <hr/> |



The 8,319 entrants for homesteads represented 19,802 persons, as compiled from the information obtained from each entrant. Of these entries 2,663 were made by residents of the several provinces of the Dominion; 10 by Canadians who had returned from the United States; and 1,087 by persons who had obtained homestead entries, but which had either been cancelled by default or at the request of the entrants in order, in most cases, to enter for other lands; 1,315 were made by persons from the British Isles, 2,084 by Americans, 125 by naturalized Austro-Hungarians, 217 by Russians, 248 by Norwegians, 195 by Swedes, 10 by naturalized Germans, 54 by Frenchmen, 39 by Belgians, and the remaining 272 homestead entries were made by citizens of various other countries.

CANCELLED ENTRIES.

There were cancelled during the same period 7,584 entries, made up as follows:—

|                           | Manitoba. | Saskatche-<br>wan. | Alberta. | British<br>Columbia. |
|---------------------------|-----------|--------------------|----------|----------------------|
| Homesteads.....           | 1,128     | 2,193              | 2,813    | 180                  |
| Pre-emptions.....         |           | 708                | 482      |                      |
| Purchased homesteads..... |           | 46                 | 12       |                      |
| Sales.....                |           | 19                 | 3        |                      |
| Total.....                | 1,128     | 2,966              | 3,310    | 180                  |

SALES.

Four hundred and fourteen sales were made during the fiscal year for 18,221 acres of land, with an average for each sale of about 44.01 acres.

NEWLY SURVEYED LANDS THROWN OPEN TO HOMESTEAD ENTRY.

During the past fiscal year newly surveyed lands, comprised in thirty-seven townships, were made available for homestead entry in the following land agencies: Revelstoke, British Columbia, in five townships; Kamloops, British Columbia, in thirty-two townships.

ACCOUNTS AND REVENUE.

There are at present kept in the branch about 45,000 accounts in connection with purchased homesteads, pre-emptions, and ordinary sales.

During the fiscal year \$2,970,260.76, including \$306,886.82 interest on deferred payments, was received on account of purchased homesteads, pre-emptions, and ordinary sales, being an increase of \$292,019.59 as compared with the payments received during the previous year.

REFUNDS.

There were 2,371 refunds made amounting to \$87,176.45, as follows:—

|  |             |             |
|--|-------------|-------------|
| On account of improvements on cancelled home-<br>steads, 1,058 refunds.. . . .   | \$61,080 60 |             |
| Overpayments on sales, and moneys paid on can-<br>celled purchased homestead entries and can-<br>celled pre-emption sales, 1,313 refunds.. . . . | 26,095 85   | \$87,176 45 |



## SESSIONAL PAPER No. 25

A. —STATEMENT OF LETTERS PATENT covering Dominion Lands situate in Manitoba, Saskatchewan, Alberta, Northwest Territories, British Columbia, and the Yukon Territory issued from the Department of the Interior during the fiscal year ending March 31, 1918, as compared with the fiscal year ending March 31, 1917, and recorded in the Land Patents Branch.

| No. | Nature of Grant.   | From April 1, 1917<br>to March 31, 1918. |           | From April 1, 1916,<br>to March 31, 1917. |           |
|-----|--|--|-----------|---|-----------|
|     |  | Patents.                                 | Acres.    | Patents.                                  | Acres.    |
| 1   | Alberta Railway and Irrigation Co's sales.....                           | 25                                       | 13,276    | 34  | 34,065    |
| 2   | British Columbia Homesteads.....   | 121                                      | 15,255    | 144                                       | 17,687    |
| 3   | British Columbia sales.....  | 31                                       | 612       | 29  | 594       |
| 4   | Coal lands sales.....  |  |           | 6   | 1,108     |
| 5   | Coal surface sales.....  | 2  | 6         |   |           |
| 6   | Commutation grants.....  |  |           | 1   | 50        |
| 7   | Greater Winnipeg Water District.....                                     |  |           | 15  | 2,148     |
| 8   | Homesteads.....  | 14,318                                   | 2,301,330 | 12,672                                    | 2,067,086 |
| 9   | Homesteads, Peace River Block.....                                       | 104                                      | 16,571    | 83  | 13,209    |
| 10  | Hudson's Bay Co.....   |  |           | 34  | 16,997    |
| 11  | License of occupation.....   | 44                                       | 331       | 35  | 140       |
| 12  | Manitoba University grants.....  |  |           | 1   | 165       |
| 13  | Military bounty grants.....  | 1  | 159       |   |           |
| 14  | Military homesteads.....   | 1  | 322       | 1   | 243       |
| 15  | Mining lands sales.....  | 9  | 455       | 3   | 114       |
| 16  | Mineral rights (974 acres).....  | 4  |           | 5   |           |
| 17  | Northwest half-breed grants.....   | 5  | 797       | 6   | 965       |
| 18  | Parish sales.....  | 3  | 1,163     | 4   | 392       |
| 19  | Pre-emption sales.....   | 6,138                                    | 976,395   | 3,567                                     | 567,028   |
| 20  | Purchased homesteads.....  | 876                                      | 137,253   | 748                                       | 117,660   |
| 21  | Quit claim, special grants (2,914 acres).....                            | 25                                       |           | 30  |           |
|     | RAILWAYS:—   |  |           |   |           |
| 22  | Alberta and Great Waterways Railway Co.....                              | 30                                       | 418       | 2   | 13        |
| 23  | Calgary and Edmonton Railway Co.....                                     | 122                                      | 46,915    | 84  | 26,989    |
| 24  | Canadian Northern Alberta Railway Co.....                                | 1  | 6         | 2   | 15        |
| 25  | Canadian Northern Railway Co.....  | 46                                       | 37,262    | 61  | 10,413    |
| 26  | Canadian Northwestern Railway Co.....                                    | 1  | 2         | 5   | 81        |
| 27  | Canadian Pacific Railway grants.....                                     | 26                                       | 222       | 35  | 289       |
| 28  | Canadian Pacific Railway roadbed and station<br>grounds.....             | 21                                       | 70        | 11  | 88        |
| 29  | Central Canada Railway Co.....   | 14                                       | 191       |   |           |
| 30  | Edmonton, Dunvegan and British Columbia Rail-<br>way Co.....             | 74                                       | 1,285     | 16  | 237       |
| 31  | Grand Trunk Pacific Railway.....   | 11                                       | 222       | 13  | 194       |
| 32  | Grand Trunk Pacific Branch Lines Co.....                                 | 9  | 74        | 16  | 116       |
| 33  | Kootenay Central Railway Co.....   | 1  | 1         | 1   | 9         |
| 34  | Manitoba and Southeastern Railway Co.....                                |  |           | 6   | 910       |
| 35  | Manitoba and Northwestern Railway Co.....                                | 5  | 11        |   |           |
| 36  | Qu'Appelle, Long Lake and Saskatchewan Railroad<br>and Steamboat Co..... | 147                                      | 35,617    | 191                                       | 40,160    |
| 37  | Winnipeg River Railway Co.....   |  |           | 2   | 55        |
| 38  | Sales.....   | 376                                      | 34,299    | 352                                       | 29,427    |
| 39  | School lands sales.....  | 562                                      | 96,844    | 440                                       | 62,567    |
| 40  | Special grants.....  | 66                                       | 4,096     | 88  | 6,824     |
| 41  | Vancouver Power Co., right of way.....                                   |  |           | 1   | 10        |
| 42  | Yukon Territory homesteads.....  |  |           | 1   | 160       |
| 43  | Yukon Territory sales (174 acres).....                                   | 8  | 172       | 29  | 970       |
|     | Totals .....   | 23,227                                   | 3,721,632 | 18,774                                    | 3,019,178 |



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B.—STATEMENT OF LETTERS PATENT covering Dominion Lands situate in the province of Manitoba, issued from the Department of the Interior during the fiscal year ending March 31, 1918, as compared with the fiscal year ending March 31, 1917, and recorded in the Land Patents Branch.

| No. | Nature of Grant.  | From April 1, 1917,<br>to March 31, 1918. |         | From April 1, 1916,<br>to March 31, 1917. |         |
|-----|---|---|---------|---|---------|
|     |   | Patents.                                  | Acres.  | Patents.                                  | Acres.  |
| 1   | Commutation grants.....                                       |   |         | 1   | 50      |
| 2   | Greater Winnipeg Water District.....                          |   |         | 15  | 2,148   |
| 3   | Homesteads.....   | 1,138                                     | 183,243 | 919                                       | 145,135 |
| 4   | Hudson's Bay Co.....  |   |         | 19  | 10,506  |
| 5   | Manitoba University grants.....                               |   |         | 1   | 165     |
| 6   | Mining lands sales.....                                       | 8   | 301     | 2   | 95      |
| 7   | Parish sales.....   | 2   | 377     | 4   | 392     |
| 8   | Pre-emption sales.....  | 2   | 279     | 1   | 143     |
| 9   | Quit claim, special grants (160 acres).....                   | 1   |         | 1   |         |
|     | Railways—   |   |         |   |         |
| 10  | Canadian Northern Railway Co.....                             | 4   | 61      | 23  | 381     |
| 11  | Canadian Pacific Railway grants.....                          | 1   | 7       |   |         |
| 12  | Canadian Pacific Railway road-bed and station<br>grounds..... | 17  | 28      | 2   | 7       |
| 13  | Grand Trunk Pacific Railway.....                              | 1   | 1       |   |         |
| 14  | Manitoba and Northwestern Railway Co.....                     | 2   | 3       |   |         |
| 15  | Winnipeg River Railway Co.....                                |   |         | 2   | 55      |
| 16  | Sales.....  | 41  | 2,198   | 37  | 1,980   |
| 17  | School lands sales.....                                       | 147                                       | 28,436  | 183                                       | 30,881  |
| 18  | Special grants.....   | 7   | 62      | 15  | 730     |
|     | Totals.....   | 1,371                                     | 214,996 | 1,225                                     | 192,668 |



## SESSIONAL PAPER No. 25

C.—STATEMENT OF LETTERS PATENT covering Dominion Lands situate in the province of Saskatchewan, issued from the Department of the Interior during the fiscal year ending March 31, 1918, as compared with the fiscal year ending March 31, 1917, and recorded in the Land Patents Branch.

| No. | Nature of Grant.   | From April 1, 1917,<br>to March 31, 1918. |           | From April 1, 1916,<br>to March 31, 1917. |           |
|-----|--|---|-----------|---|-----------|
|     |  | Patents.                                  | Acres.    | Patents.                                  | Acres.    |
| 1   | Homesteads.....  | 7,794                                     | 1,251,722 | 6,789                                     | 1,109,426 |
| 2   | Hudson's Bay Co.....   |   |           | 7   | 3,044     |
| 3   | License of occupation.....   | 20  | 92        | 19  | 85        |
| 4   | Military homesteads.....   | 1   | 322       |   |           |
| 5   | Northwest half-breed grants.....                                     | 2   | 319       | 3   | 563       |
| 6   | Pre-emption sales.....   | 3,722                                     | 591,615   | 2,259                                     | 359,103   |
| 7   | Purchased homesteads.....  | 593                                       | 92,765    | 499                                       | 78,003    |
| 8   | Quit claim, special grants (2,971 acres).....                        | 21  |           | 24  |           |
|     | Railways—  |   |           |   |           |
| 9   | Calgary and Edmonton Railway Co.....                                 | 1   | 159       | 2   | 321       |
| 10  | Canadian Northern Railway Co.....                                    | 42  | 37,201    | 38  | 10,032    |
| 11  | Canadian Pacific Railway grants.....                                 | 25  | 215       | 19  | 133       |
| 12  | Canadian Pacific Railway road-bed and station grounds.....           | 3   | 33        |   |           |
| 13  | Grand Trunk Pacific Railway.....                                     | 6   | 19        | 5   | 65        |
| 14  | Grand Trunk Pacific Branch Lines Co.....                             | 1   | 6         | 15  | 103       |
| 15  | Manitoba and Northwestern Railway Co.....                            | 3   | 8         |   |           |
| 16  | Manitoba and Southeastern Railway Co.....                            |   |           | 6   | 910       |
| 17  | Qu'Appelle Long Lake and Saskatchewan Railroad and Steamboat Co..... | 147                                       | 35,617    | 191                                       | 40,160    |
| 18  | Sales.....   | 166                                       | 14,619    | 169                                       | 16,273    |
| 19  | School lands sales.....  | 190                                       | 26,721    | 148                                       | 16,004    |
| 20  | Special grants.....  | 28  | 2,206     | 37  | 2,311     |
|     | Totals.....  | 12,765                                    | 2,053,639 | 10,230                                    | 1,636,551 |



D.—STATEMENT OF LETTERS PATENT covering Dominion Lands situate in the province of Alberta, issued from the Department of the Interior during the fiscal year ending March 31, 1918, as compared with the fiscal year ending March 31, 1917, and recorded in the Land Patents Branch.

| No. | Nature of Grant.  | From April 1, 1917,<br>to March 31, 1918. |           | From April 1, 1916,<br>to March 31, 1917. |           |
|-----|---|---|-----------|---|-----------|
|     |   | Patents.                                  | Acres.    | Patents.                                  | Acres.    |
| 1   | Alberta Railway and Irrigation Co.'s sales.....             | 25  | 13,276    | 34  | 34,065    |
| 2   | Coal lands sales.....                                       |   |           | 6   | 1,108     |
| 3   | Coal surface sales.....                                     | 2   | 6         |   |           |
| 4   | Homesteads.....   | 5,386                                     | 866,365   | 4,964                                     | 812,525   |
| 5   | Hudson's Bay Co.....  |   |           | 7   | 3,418     |
| 6   | License of occupation.....                                  | 24  | 239       | 16  | 55        |
| 7   | Military bounty grants.....                                 | 1   | 159       |   |           |
| 8   | Military homesteads.....                                    |   |           | 1   | 243       |
| 9   | Mining lands sales.....                                     | 1   | 154       | 1   | 19        |
| 10  | Mineral rights (975 acres).....                             | 4   |           | 5   |           |
| 11  | Northwest half-breed grants.....                            | 3   | 478       | 3   | 402       |
| 12  | Parish sales.....   | 1   | 786       |   |           |
| 13  | Pre-emption sales.....                                      | 2,414                                     | 384,501   | 1,307                                     | 207,777   |
| 14  | Purchased homesteads.....                                   | 282                                       | 44,477    | 249                                       | 39,657    |
| 15  | Quit claim, special grants (199 acres).....                 | 3   |           | 5   |           |
|     | Railways—   |   |           |   |           |
| 16  | Alberta and Great Waterways Railway Co.....                 | 30  | 418       | 2   | 13        |
| 17  | Calgary and Edmonton Railway Co.....                        | 121                                       | 46,756    | 82  | 26,668    |
| 18  | Canadian Northern Alberta Railway Co.....                   | 1   | 6         | 2   | 15        |
| 19  | Canadian Northwestern Railway Co.....                       | 1   | 2         | 5   | 81        |
| 20  | Central Canada Railway Co.....                              | 14  | 191       |   |           |
| 21  | Canadian Pacific Railway grants.....                        |   |           | 16  | 151       |
| 22  | Edmonton Dunvegan and British Columbia Rail-<br>way Co..... | 74  | 1,285     | 16  | 237       |
| 23  | Grand Trunk Pacific Railway Co.....                         | 4   | 202       | 8   | 129       |
| 24  | Grand Trunk Pacific Branch Lines Co.....                    | 8   | 68        | 1   | 8         |
| 25  | Sales.....  | 167                                       | 17,466    | 143                                       | 11,055    |
| 26  | School lands sales.....                                     | 225                                       | 41,687    | 109                                       | 15,682    |
| 27  | Special grants.....   | 28  | 1,813     | 33  | 3,687     |
|     | Totals.....   | 8,819                                     | 1,420,335 | 7,015                                     | 1,156,995 |



## SESSIONAL PAPER No. 25

E.—STATEMENT OF LETTERS PATENT covering Dominion Lands situate in the province of British Columbia, issued from the Department of the Interior during the fiscal year ending March 31, 1918, as compared with the fiscal year ending March 31, 1917, and recorded in the Land Patents Branch.

| No. | Nature of Grant.   | From April 1, 1917,<br>to March 31, 1918. |        | From April 1, 1916,<br>to March 31, 1917. |        |
|-----|--|---|--------|---|--------|
|     |  | Patents.                                  | Acres. | Patents.                                  | Acres. |
| 1   | British Columbia homesteads.....                           | 121                                       | 15,255 | 144                                       | 17,687 |
| 2   | British Columbia sales.....                                | 31  | 612    | 29  | 594    |
| 3   | Homesteads, Peace River Block.....                         | 104                                       | 16,571 | 83  | 13,209 |
| 4   | Purchased homesteads.....                                  | 1   | 11     | .....                                     | .....  |
| 4   | Railways—  |   |        |   |        |
| 5   | Canadian Pacific Railway road-bed and station grounds..... | 1   | 9      | 9   | 81     |
| 6   | Kootenay Central Railway Co.....                           | 1   | 1      | 1   | 9      |
| 7   | Special grants.....  | 2   | 10     | 3   | 96     |
| 8   | Vancouver Power Co., right of way.....                     | .....                                     | .....  | 1   | 10     |
|     | Totals.....  | 261                                       | 32,469 | 270                                       | 31,686 |

F.—STATEMENT OF LETTERS PATENT covering Dominion Lands situate in the Yukon Territory, issued from the Department of the Interior during the fiscal year ending March 31, 1918, as compared with the fiscal year ending March 31, 1917, and recorded in the Land Patents Branch.

| No. | Nature of Grant.                                     | From April 1, 1917,<br>to March 31, 1918. |        | From April 1, 1916,<br>to March 31, 1917. |        |
|-----|--|---|--------|---|--------|
|     |  | Patents.                                  | Acres. | Patents.                                  | Acres. |
| 1   | Yukon Territory homesteads.....                      | .....                                     | .....  | 1   | 160    |
| 2   | Yukon Territory sales (174 acres), under rights..... | 8   | 172    | 29  | 970    |
|     | Totals.....  | 8   | 172    | 30  | 1,130  |

G.—STATEMENT OF LETTERS PATENT covering Dominion Lands situate in the Northwest Territories, issued from the Department of the Interior during the fiscal year ending March 31, 1918, as compared with the fiscal year ending March 31, 1917.

| No. | Nature of Grant.     | From April 1, 1917,<br>to March 31, 1918. |        | From April 1, 1916,<br>to March 31, 1917. |        |
|-----|----------------------|---|--------|---|--------|
|     |                      | Patents.                                  | Acres. | Patents.                                  | Acres. |
| 1   | Hudson's Bay Co..... | .....                                     | .....  | 1   | 29     |
| 2   | Sales.....           | 2   | 16     | 3   | 119    |
| 3   | Special grants.....  | 1   | 5      | .....                                     | .....  |
|     | Totals.....          | 3   | 21     | 4   | 148    |



H.—STATEMENT showing the number of homestead entries made during the fiscal year ending March 31, 1918, the nationality of the homesteaders and the provinces in which the entries were made.

| Nationalities.                                 | Provinces. |                    |          |                      | Total. |
|--|------------|--------------------|----------|----------------------|--------|
|  | Manitoba.  | Saskatch-<br>ewan. | Alberta. | British<br>Columbia. |        |
| Canadians from Ontario.....                    | 225        | 433                | 502      | 19                   | 1,179  |
| “ “ Quebec.....                                | 64         | 183                | 174      | 4                    | 425    |
| “ “ Nova Scotia.....                           | 47         | 30                 | 57       | 4                    | 138    |
| “ “ New Brunswick.....                         | 9          | 21                 | 55       | 2                    | 87     |
| “ “ Prince Edward Island.....                  | 3          | 13                 | 31       | 2                    | 49     |
| “ “ Manitoba.....                              | 264        | 103                | 32       | 4                    | 403    |
| “ “ Saskatchewan.....                          | 12         | 127                | 36       | 2                    | 177    |
| “ “ Alberta.....                               | 3          | 16                 | 137      | 2                    | 158    |
| “ “ British Columbia.....                      |            | 7                  | 24       | 16                   | 47     |
| Persons who had previous entry.....            | 218        | 321                | 531      | 17                   | 1,087  |
| Newfoundlanders.....                           |            | 4                  | 3        | 1                    | 8      |
| Canadians returned from the United States..... |            | 5                  | 5        |                      | 10     |
| Americans.....                                 | 134        | 694                | 1,222    | 34                   | 2,084  |
| English.....                                   | 239        | 269                | 346      | 34                   | 888    |
| Scotch.....                                    | 88         | 79                 | 113      | 5                    | 285    |
| Irish.....                                     | 27         | 39                 | 64       | 12                   | 142    |
| French.....                                    | 18         | 23                 | 13       |                      | 54     |
| Belgians.....                                  | 9          | 14                 | 16       |                      | 39     |
| Swiss.....                                     | 8          | 8                  | 7        | 1                    | 24     |
| Italians.....                                  | 1          | 6                  | 16       | 2                    | 25     |
| Roumanians.....                                |            | 14                 | 5        |                      | 19     |
| Syrians.....                                   |            | 2                  |          |                      | 2      |
| Germans.....                                   | 4          | 3                  | 3        |                      | 10     |
| Austro-Hungarians.....                         | 58         | 30                 | 33       | 4                    | 125    |
| Hollanders.....                                | 2          | 15                 | 24       | 1                    | 42     |
| Danes (other than Icelanders).....             | 5          | 8                  | 33       |                      | 46     |
| Icelanders.....                                | 33         | 3                  | 2        |                      | 38     |
| Swedes.....                                    | 43         | 64                 | 81       | 7                    | 195    |
| Norwegians.....                                | 19         | 84                 | 142      | 3                    | 248    |
| Russians (other than Finns).....               | 35         | 105                | 77       |                      | 217    |
| Finns.....                                     | 24         | 6                  | 8        |                      | 38     |
| Servians.....                                  |            | 1                  | 1        |                      | 2      |
| Bulgarians.....                                |            | 1                  | 3        |                      | 4      |
| Chinese.....                                   |            |                    | 1        |                      | 1      |
| Japanese.....                                  |            | 2                  |          |                      | 2      |
| Persians.....                                  |            | 2                  |          |                      | 2      |
| Australians.....                               |            | 2                  | 3        | 1                    | 6      |
| New Zealanders.....                            |            |                    | 2        |                      | 2      |
| Hindoos.....                                   |            |                    |          |                      |        |
| Hebrews.....                                   | 1          |                    | 1        |                      | 2      |
| Algerians.....                                 | 1          |                    |          |                      | 1      |
| Luxemburger.....                               |            | 1                  |          |                      | 1      |
| Spaniard.....                                  |            | 1                  |          |                      | 1      |
| Poles.....                                     |            |                    | 2        |                      | 2      |
| South African.....                             |            |                    | 1        |                      | 1      |
| West Indies.....                               |            |                    | 1        |                      | 1      |
| Mexicans.....                                  |            |                    | 2        |                      | 2      |
| Total.....                                     | 1,594      | 2,737              | 3,811    | 177                  | 8,319  |

Number of souls represented by above entries, 19,802.



## SESSIONAL PAPER No. 25

I.—STATEMENT showing the number of homestead entries made in the provinces of Manitoba, Saskatchewan, Alberta and British Columbia during the fiscal year ending March 31, 1918, by persons coming from the United States of America.

| States.                    | Provinces. |                    |          |                      | Total. |
|----------------------------|------------|--------------------|----------|----------------------|--------|
|                            | Manitoba.  | Saskat-<br>chewan. | Alberta. | British<br>Columbia. |        |
| Alabama.....               |            |                    | 1        |                      | 1      |
| Alaska.....                |            |                    | 1        |                      | 1      |
| Arizona.....               |            |                    |          |                      |        |
| Arkansas.....              | 2          | 1                  | 5        |                      | 8      |
| California.....            |            | 1                  | 15       | 3                    | 19     |
| Carolina, North.....       | 1          | 3                  | 10       | 1                    | 15     |
| Carolina, South.....       |            |                    | 2        |                      | 2      |
| Colorado.....              |            |                    | 8        |                      | 8      |
| Columbia, District of..... |            |                    |          |                      |        |
| Connecticut.....           |            | 2                  | 3        |                      | 5      |
| Dakota, North.....         | 19         | 111                | 102      | 2                    | 234    |
| Dakota, South.....         | 3          | 33                 | 31       |                      | 67     |
| Delaware.....              |            |                    |          |                      |        |
| Florida.....               |            | 1                  | 1        |                      | 2      |
| Georgia.....               |            | 1                  | 5        |                      | 6      |
| Idaho.....                 |            | 1                  | 30       | 3                    | 34     |
| Illinois.....              | 18         | 48                 | 80       | 1                    | 147    |
| Indiana.....               | 1          | 11                 | 37       | 1                    | 50     |
| Indian Territory.....      |            |                    |          |                      |        |
| Iowa.....                  | 10         | 64                 | 89       | 2                    | 165    |
| Kansas.....                | 2          | 14                 | 48       |                      | 64     |
| Kentucky.....              | 1          | 3                  | 15       | 1                    | 20     |
| Louisiana.....             |            |                    |          |                      |        |
| Maine.....                 | 3          | 9                  | 10       |                      | 22     |
| Maryland.....              |            |                    | 2        |                      | 2      |
| Massachusetts.....         | 3          | 12                 | 12       | 2                    | 29     |
| Michigan.....              | 10         | 44                 | 83       | 3                    | 140    |
| Minnesota.....             | 30         | 164                | 177      | 2                    | 373    |
| Mississippi.....           | 1          | 1                  | 4        |                      | 6      |
| Missouri.....              | 1          | 16                 | 51       |                      | 68     |
| Montana.....               | 2          | 16                 | 24       |                      | 42     |
| Nebraska.....              | 1          | 15                 | 36       | 1                    | 53     |
| Nevada.....                |            | 2                  | 1        |                      | 3      |
| New Hampshire.....         |            | 3                  | 2        |                      | 5      |
| New Jersey.....            | 1          |                    | 3        |                      | 4      |
| New Mexico.....            |            |                    | 3        |                      | 3      |
| New York.....              | 4          | 12                 | 40       | 2                    | 58     |
| Ohio.....                  | 4          | 16                 | 39       | 1                    | 60     |
| Oklahoma.....              | 1          | 6                  | 21       |                      | 28     |
| Oregon.....                |            | 3                  | 23       | 2                    | 28     |
| Pennsylvania.....          | 2          | 12                 | 36       | 3                    | 53     |
| Rhode Island.....          |            | 4                  |          |                      | 4      |
| Tennessee.....             | 1          | 8                  | 8        | 1                    | 18     |
| Texas.....                 | 1          | 4                  | 14       |                      | 19     |
| Utah.....                  |            | 2                  | 5        |                      | 7      |
| Vermont.....               |            | 1                  | 5        |                      | 6      |
| Virginia.....              | 4          | 4                  | 1        |                      | 9      |
| Virginia, West.....        |            | 2                  | 7        |                      | 9      |
| Washington.....            |            | 7                  | 58       |                      | 65     |
| Wisconsin.....             | 7          | 41                 | 71       | 4                    | 123    |
| Wyoming.....               | 1          | 1                  | 5        |                      | 7      |
| Total.....                 | 134        | 699                | 1,224    | 35                   | 2,092  |



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REPORT OF THE ACTING SUPERINTENDING ACCOUNTANT,  
G. D. POPE.

STATEMENTS of revenue collected from various sources during the fiscal year ended March 31, 1918, as follows:—

|  |                 |
|--|-----------------|
| A.—Dominion Lands, including Yukon. . . . .  | \$ 4,557,438 61 |
| B.—Ordinance Lands. . . . .                  | 7,929 75        |
| C.—School Lands. . . . .                     | 2,836,216 40    |
| D.—Registration Fees, Yukon. . . . .         | 562 25          |
| E.—Fines and Forfeitures. . . . .            | 553 00          |
| F.—Casual Revenue. . . . .                   | 9,074 15        |
| G.—Seed Grain and Relief Repayments. . . . . | 2,613,708 67    |
| H.—Fines under Immigration Act. . . . .      | 3,133 00        |
| I.—Chinese Immigration Revenue. . . . .      | 336,757 00      |
| J.—Sales of Land, Special account. . . . .   | 626,203 49      |
|  | <hr/>           |
|  | \$10,991,576 32 |

A statement of revenue on account of Dominion Lands (marked K) shows the receipts, classified under subheads.

Statement (marked L) shows a comparison between the receipts on account of revenue of the previous twelve months.

DOMINION LANDS REVENUE (cash and scrip) for the fiscal year ended March 31, 1918.

| Agencies.                                     | Cash.        | Scrip.  | Total.       |
|---|--------------|---------|--------------|
| <i>Yukon Territory—</i>                       | \$ cts.      | \$ cts. | \$ cts.      |
| Sales of land. . . . .                        | 1,062 12     |         | 1,062 12     |
| Rentals of land. . . . .                      | 6,872 15     |         | 6,872 15     |
| Map sales, office fees, etc. . . . .          | 60 50        |         | 60 50        |
| Timber dues. . . . .                          | 12,238 31    |         | 12,238 31    |
| Hay permits. . . . .                          | 28 20        |         | 28 20        |
| Mining fees. . . . .                          | 45,644 50    |         | 45,644 50    |
| Export tax on gold. . . . .                   | 81,650 55    |         | 81,650 55    |
| Free certificates for export of gold. . . . . | 35 00        |         | 35 00        |
| Hydraulic leases. . . . .                     | 2,273 23     |         | 2,273 23     |
| Dredging leases. . . . .                      | 701 76       |         | 701 76       |
| Coal royalty and fees. . . . .                | 40 00        |         | 40 00        |
| Homestead fees. . . . .                       | 50 00        |         | 50 00        |
| Interim receipt account. . . . .              | 153 00       |         | 153 00       |
|   | <hr/>        |         | <hr/>        |
|   | 150,809 32   |         | 150,809 32   |
| <i>Dominion Lands Agencies—</i>               |              |         |              |
| Battleford. . . . .                           | 111,475 50   |         | 111,475 50   |
| Calgary. . . . .                              | 595,419 31   |         | 595,419 31   |
| Dauphin. . . . .                              | 11,929 94    |         | 11,929 94    |
| Edmonton. . . . .                             | 54,021 91    |         | 54,021 91    |
| Grande Prairie. . . . .                       | 17,296 07    |         | 17,296 07    |
| High Prairie. . . . .                         | 2,173 90     |         | 2,173 20     |
| Humboldt. . . . .                             | 8,599 74     |         | 8,599 94     |
| Kamloops. . . . .                             | 7,927 20     |         | 7,927 20     |
| Lethbridge. . . . .                           | 190,043 17   |         | 190,043 17   |
| Maple Creek. . . . .                          | 490,297 87   |         | 490,297 87   |
| Medicine Hat. . . . .                         | 260,238 33   |         | 260,238 33   |
| Moosejaw. . . . .                             | 568,225 48   | 43 12   | 568,268 60   |
| New Westminster. . . . .                      | 4,070 01     |         | 4,070 01     |
| Peace River. . . . .                          | 9,118 02     |         | 9,118 02     |
| Prince Albert. . . . .                        | 15,283 46    | 88 35   | 15,371 81    |
| Red Deer. . . . .                             | 73,500 02    |         | 73,500 02    |
| The Pas. . . . .                              | 509 40       |         | 509 40       |
| Revelstoke. . . . .                           | 1,408 21     |         | 1,408 21     |
| Saskatoon. . . . .                            | 269,914 77   |         | 269,914 77   |
| Swift Current. . . . .                        | 414,761 47   |         | 414,761 47   |
| Weyburn. . . . .                              | 81,869 35    |         | 81,869 35    |
| Winnipeg. . . . .                             | 26,656 14    |         | 26,656 14    |
| Yorkton. . . . .                              | 4,320 29     |         | 4,320 29     |
|   | <hr/>        |         | <hr/>        |
|   | 3,219,059 56 | 131 47  | 3,219,191 03 |



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DOMINION LANDS REVENUE (cash and script for the fiscal year ended March 31, 1918  
—Concluded.

| Agencies.                               | Cash.        | Scrip.  | Total.       |
|---|--------------|---------|--------------|
| <i>Crown Timber Agencies—</i>           | \$ cts.      | \$ cts. | \$ cts.      |
| Battleford.....                         | 924 93       |         | 924 93       |
| Calgary.....                            | 32,446 02    |         | 32,446 02    |
| Dauphin.....                            | 18,910 96    |         | 18,910 96    |
| Edmonton.....                           | 127,857 44   |         | 127,857 44   |
| Grande Prairie.....                     | 877 51       |         | 877 51       |
| High Prairie.....                       | 341 23       |         | 341 23       |
| Humboldt.....                           | 237 88       |         | 237 88       |
| Kamloops.....                           | 13,871 34    |         | 13,871 34    |
| Lethbridge.....                         | 690 84       |         | 690 84       |
| Maple Creek.....                        | 297 30       |         | 297 30       |
| Medicine Hat.....                       | 248 60       |         | 248 60       |
| Moose Jaw.....                          | 459 70       |         | 459 70       |
| New Westminster.....                    | 75,707 67    |         | 75,707 67    |
| Peace River.....                        | 961 46       |         | 961 46       |
| The Pas.....                            | 1,328 30     |         | 1,328 30     |
| Prince Albert.....                      | 102,650 95   |         | 102,650 95   |
| Red Deer.....                           | 1,356 45     |         | 1,356 45     |
| Revelstoke.....                         | 26,707 13    |         | 26,707 13    |
| Saskatoon.....                          | 118 00       |         | 118 00       |
| Swift Current.....                      | 5 25         |         | 5 25         |
| Winnipeg.....                           | 62,566 70    |         | 62,566 70    |
| Yorkton.....                            | 1,202 28     |         | 1,202 28     |
|   | 469,767 94   |         | 469,767 94   |
| <i>Miscellaneous—</i>                   |              |         |              |
| Rocky Mountain Park.....                | 43,632 08    |         | 43,632 08    |
| Jasper Park.....                        | 5,292 83     |         | 5,292 83     |
| Yoho Park.....                          | 502 40       |         | 502 40       |
| Waterton Lakes Park.....                | 1,307 65     |         | 1,307 65     |
| Elk Island Park.....                    | 1 00         |         | 1 00         |
| Buffalo Park.....                       | 142 46       |         | 142 46       |
| Glacier Park.....                       | 331 90       |         | 331 90       |
| Fort Anne Park.....                     | 45 00        |         | 45 00        |
| Antelope Park.....                      | 905 20       |         | 905 20       |
| Survey fees.....                        | 7,915 99     |         | 7,915 99     |
| Irrigation fees.....                    | 458 75       |         | 458 75       |
| Map sales, Office fees, etc.....        | 9,261 44     |         | 9,261 44     |
| Fees, Board of Examiners, D.L.S.....    | 250 00       |         | 250 00       |
| Mining fees.....                        | 14,034 81    |         | 14,034 81    |
| Grazing lands.....                      | 125,300 69   | 240 00  | 125,540 69   |
| Grazing lands (Improvements).....       | 1,172 60     |         | 1,172 60     |
| Hay permits.....                        | 10,833 42    |         | 10,833 42    |
| Coal lands.....                         | 334,849 57   |         | 334,849 57   |
| Dredging leases.....                    | 2,241 69     |         | 2,241 69     |
| Stone quarries.....                     | 7,117 30     |         | 7,117 30     |
| Rent of water power.....                | 1,210 00     |         | 1,210 00     |
| Suspense account.....                   | 3,598 95     |         | 3,598 95     |
| Petroleum.....                          | 124,179 69   |         | 124,179 69   |
| Sand, stone and gravel.....             | 1,094 98     |         | 1,094 98     |
| Forestry Branch—Sale of trees, etc..... | 3,907 50     |         | 3,907 50     |
| Fishing permits.....                    | 67 00        |         | 67 00        |
| Improvements.....                       | 11 00        |         | 11 00        |
| General sales.....                      | 1,298 19     |         | 1,298 19     |
| Rentals.....                            | 941 31       |         | 941 31       |
| Miscellaneous.....                      | 4,240 85     |         | 4,240 85     |
| Irrigation sales.....                   | 11,595 54    |         | 11,595 54    |
| Potash leases.....                      | 60 00        |         | 60 00        |
|   | 717,801 79   | 240 00  | 718,041 79   |
| Total revenue.....                      | 4,557,438 61 | 371 47  | 4,557,810 08 |
| Less refunds.....                       | 113,680 44   |         | 113,680 44   |
|   | 4,443,758 17 | 371 47  | 4,444,129 64 |

Ordinance lands revenue for the fiscal year ended March 31, 1918, was \$7,929.75.







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DOMINION LANDS REVENUE (cash and script for the fiscal year ended March 31, 1918. credited to the Special Accounts of the following Railway Companies for the Fiscal Year ended March 31, 1918.

| Railway Company.   | Date of Order in Council.       | Amount.    | Total.        |
|--|---------------------------------|------------|---------------|
|  |                                 | \$ cts.    |               |
| Calgary and Edmonton Railway.....  | August 17, 1908.....            | 274,837 38 |               |
| Qu'Appelle, Long Lake and Saskatchewan Railway.....                            | May 8, 1907, July 10, 1907..... | 165,969 16 |               |
| Lake Manitoba Railway and Canal Company, Canadian Northern Railway System..... | December 5, 1908.....           | 185,396 95 |               |
|  | Total.....                      |            | \$ 626,203 49 |

STATEMENT of Gross Cash Receipts on account of Dominion Lands Revenue for the Fiscal Year ended March 31, 1918.

|  |                       |
|--|-----------------------|
| Homestead fees.. . . . .                                     | \$ 83,180 00          |
| Pre-emption and purchased homestead fees.. . . . .           | 9,910 00              |
| Improvements.. . . . .                                       | 89,371 59             |
| General sales of land.. . . . .                              | 3,046,091 55          |
| Timber dues.. . . . .  | 482,006 25            |
| Rental from grazing lands.. . . . .                          | 125,300 69            |
| Export tax on gold, hay, coal, petroleum, mining fees, etc.. | 630,427 95            |
| Canadian national parks.. . . . .                            | 52,160 52             |
| Survey fees.. . . . .  | 7,915 99              |
| Map sales, rentals, office fees and miscellaneous.. . . . .  | 31,074 07             |
| Total.. . . . .  | <u>\$4,557,438 61</u> |

STATEMENT of Gross Receipts (Cash and Scrip) on account of Dominion Lands Revenue for the Fiscal Year ended March 31, 1918, compared with the previous Fiscal Year.

| Particulars.                         | 1917-1918.   | 1916-1917.   | Increase.  | Decrease. | Net Increase |
|--------------------------------------|--------------|--------------|------------|-----------|--------------|
|                                      | \$ cts.      | \$ cts.      | \$ cts.    | \$ cts.   | \$ cts.      |
| Dominion Lands Agencies.....         | 3,219,191 03 | 2,934,509 85 | 284,681 18 |           |              |
| Crown Timber Agencies.....           | 469,767 94   | 414,842 61   | 54,925 33  |           |              |
| Hay, Mining, Coal, Grazing, etc..... | 665,881 27   | 620,468 33   | 45,412 94  |           |              |
| Yukon Territory.....                 | 150,809 32   | 174,565 92   |            | 23,756 60 |              |
| Canadian National Parks.....         | 52,160 52    | 45,851 45    | 6,309 07   |           |              |
| Totals.....                          | 4,557,810 08 | 4,190,238 10 | 391,328 52 | 23,756 60 | 367,571 98   |



REPORT OF THE ORDNANCE AND ADMIRALTY LANDS BRANCH,  
J. P. DUNNE, SUPERINTENDENT.

During the fiscal year ending March 31, 1918, there were no public sales of Ordnance Lands held, but with respect to the land, formerly sold or occupied under lease, with option to purchase, twenty-eight parcels or lots situated in the several localities hereunder mentioned have been fully paid and letters patent issued therefor.

1.—GRAND FALLS, N.B.

One farm lot and one town lot located within the boundaries of this reserve which were disposed of at sales by public auction held in September, 1902, and May, 1908, for the sum of \$226.75, have been paid in full and letters patent issued; the balance of the purchase money received within the last fiscal year was \$136.07.

2.—OTTAWA.

Ordnance lands in this locality are occupied by tenants under leases originally granted by the Imperial authorities in which it is provided that the lessees may, upon payment in cash of the purchase price in full for the land occupied, convert their leasehold into freehold and obtain the Crown patent of these parcels or lots; one half lot was redeemed in full and letters patent issued; the total consideration money received for the said parcel was \$120.

3.—PORT MAITLAND.

This reserve is situated on the westerly side of the Grand river at its confluence with lake Erie in the township of Dunn, county of Haldimand and contains an area of about seventy-five acres; it was surveyed and subdivided into thirty-nine parcels or lots in 1916 by order of the department. Nearly the whole of this reserve has been occupied by squatters for many years, to whom the privilege was granted to purchase their holdings, at a valuation, or lease the same for a period of years at a reasonable annual rental with the option of paying the purchase price of the land in full, at any time, and obtaining letters patent therefor. During the past fiscal year twenty-five of these squatters paid the purchase price in full for their holdings, amounting to \$3,957.86, and received letters patent therefor. Eight leases covering portions of the said reserve have been likewise issued.

Moneys received during the fiscal year ending March 31, 1918, on account of ordnance lands, \$7,929.75.

Statement showing the receipts of the year classified as fees, rent, or interest equivalent to rent, and principal:—

|                   |                   |
|-------------------|-------------------|
| Fees.. . . .      | \$ 16 00          |
| Interest.. . . .  | 3,430 24          |
| Principal.. . . . | 4,483 51          |
| Total.. . . .     | <u>\$7,929 75</u> |

Statement showing amounts due and paid on account of purchase money and rent or interest for the fiscal year ending March 31, 1918:—

|                          |                   |
|--------------------------|-------------------|
| Rent or interest.. . . . | \$2,794 89        |
| Principal.. . . .        | 999 53            |
| Total.. . . .            | <u>\$3,794 42</u> |



PART II

DOMINION PARKS







## REPORT OF THE COMMISSIONER OF DOMINION PARKS.

J. B. HARKIN.

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During the fiscal year 1917-18 the work of the Dominion Parks Branch was extended to cover responsibility in connection with the Northwest Game Act and the Migratory Birds Convention Act.

In connection with the first act which deals with wild life matters in the Northwest Territories it was found that changed conditions required a complete revision of the act. A new act was drafted and was passed in August, 1917. The outstanding features of the new act are the provisions by which both the trapping and fur-trading are put under the license system. Through these provisions it is expected that the great fur resources of the North can be adequately conserved without any interference with reasonable commercial exploitation. Evidence had accumulated that alien interests, without any concern in the future, contemplated introducing large numbers of hunters into the north country with a view to a clean-up, utterly regardless of the effect upon the future, either as regards the wild life or the native population, which is almost entirely dependent upon the wild life for its food supply. The new act provides means of effectually handling such conditions.

The new act also provides special protective measures for musk-ox. Investigation showed that only such measures could prevent the extermination of this characteristic animal of the North.

### BARREN-LAND CARIBOU.

Apropos of the Northwest Game Act it may be a matter of interest that the parks branch made very extensive investigation as to the possibility of utilizing the vast herds of barren land caribou to supplement the meat supply of the Dominion. It is estimated that there are at least 20,000,000 to 30,000,000 caribou in the North. As a food, caribou meat is of first-class quality. The hide when tanned is equal to the best chamois. It is only a question of time when these vast herds will constitute a valuable asset for the Dominion. The only difficulty in the way of the utilization of these animals to-day is one of transportation. After full investigation it was felt that while, undoubtedly, caribou meat could be brought out now at fairly reasonable prices, the meat situation in the Dominion was scarcely such as called for immediate action. The caribou to-day constitute a great meat reserve for the country which can be made available if food conditions should continue to grow worse.

Throughout the preparation of the act and regulations thereunder the department received gratifying co-operation on the part of the Hudson Bay Company, the Northern Trading Company and other interests concerned in the fur trade.

The administration of the new act is being carried on under the direction of the parks service. The actual administration on the ground is being carried on by the Royal Northwest Mounted Police.

### MIGRATORY BIRDS CONVENTION ACT.

The Migratory Birds Convention Act was passed to give effect to the Canadian-American treaty providing for the protection of migratory birds. The treaty was entered into because it was recognized that the bird life of North America could be



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effectively conserved only by joint action of the United States, where the birds spend the winter, and by Canada, where the birds breed and spend the summer. The act was passed during the session of 1917 and the regulations thereunder were subsequently drafted and enacted.

Before the treaty was made all the provinces were consulted and all agreed to its principles. The supervision of the administration of the act rests upon the Department of the Interior. It is expected, however, that the actual administration on the ground will be carried on by the provincial authorities. The understanding is that the provinces will amend their legislation whenever necessary to make it conform with the terms of the treaty and that therefore when administering their own laws the provincial authorities will be administering the Federal Act.

So far as the Dominion is concerned it is felt that its most important duty at the outset, at all events, will be to carry on a campaign of education throughout the Dominion in order that the public may be made to realize the necessity of every one interesting himself in the subject of adequate protection of bird life.

#### THE PARKS AND THE WAR.

The parks service has been carried on with an appropriation equivalent to 45 per cent of the appropriation available before the war began. Necessarily, this has resulted in very little more than ordinary maintenance being carried on.

The war has also caused a diminution of tourist traffic from other countries. However, so far as Canadian tourist traffic is concerned, there has been a very substantial increase. This increase was very gratifying when it is considered that, primarily, national parks are maintained in order that the people of Canada may obtain in a maximum degree that recreation and relaxation in the out-of-doors which are essential to the well-being of the individual. The remarkable influx of people from the Prairie Provinces indicated that when our own people have brought home to them the opportunities their own parks offer they are quick to take advantage of them. In the spring of 1917 the department sent a lecturer to the West, who gave illustrated talks on the parks at Brandon and Regina and in almost every picture house in Alberta. The effect of his addresses was: "These are your own parks. They are right at your front door. Come and enjoy them." The result was that though foreign tourist traffic was much below the average, towns like Banff in Rocky Mountains park never before had such a prosperous year. The most satisfying feature of this is the feeling that thousands of our own people obtained the benefits parks have to offer in the form of renewed vigour and efficiency, mental and physical.

A large number of the visitors came to the parks in their own automobiles and camped out during their visit.

The number of automobiles which registered at the Kananaskis gate, Rocky Mountains park, were:—

|                |       |
|----------------|-------|
| 1916.. . . . . | 786   |
| 1917.. . . . . | 2,000 |

This remarkable increase emphasizes the fact that the automobile is destined to be a dominant factor in parks tourist traffic. And it, therefore, also emphasizes the necessity of attention being concentrated on road development in parks.

#### THE BANFF-WINDERMERE HIGHWAY.

During the year negotiations were carried on with the province of British Columbia in regard to the completion of the Banff-Windermere highway. This road, when completed, will provide one of the most remarkable motor routes in the world. A motorist will be able to make a 500-mile round trip, during every mile of which he will either be in the mountains or within sight of them. The route proceeding



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from Calgary via Banff crosses the main Rockies by Vermilion pass, proceeds down the Vermilion valley to the Kootenay valley; then via Sinclair pass to the Columbia valley. From there it proceeds along the Columbia to the Crowsnest Pass district by which it enters the prairies, proceeding thence to Calgary. Only about 50 miles of new construction remains to open up this wonderful route. The unfinished work is in British Columbia. That province is not in a position to proceed with the work and has made proposals looking towards the Dominion undertaking this work. The direction the proposals have taken is that in return for completing this road the province should grant to the Dominion a 10-mile strip along the highway in British Columbia for parks' purposes, and that an amicable adjustment should be made in regard to the various matters of jurisdiction within Dominion Parks, concerning which there has been conflict as between the province and the Dominion. The subject has been gone into very completely and there appears to be no reason to anticipate anything but an adjustment satisfactory to both the province and the Dominion.

## EDMONTON-VANCOUVER HIGHWAY.

Just as the Banff-Windermere Highway project is capable of completion by the linking up of constructed roads at comparatively little cost there is another automobile highway project which can be developed with very little new construction. This is a highway connecting Edmonton with Vancouver. The consolidation of the Canadian Northern and Grand Trunk Pacific railways from the vicinity of Edson, Alberta, to Moose lake, British Columbia, and the consequent abandonment of a first-class road grade between these points has made the project of a motor-road between Edmonton and Vancouver a practicable proposition. Edmonton is already connected with Edson by highway. From that point the abandoned railway roadbed will carry the highway across the main Rockies into British Columbia. The balance of the route to Vancouver is merely a matter of linking up existing roads. Last autumn Mr. Alfred Driscoll, C.E., an engineer in the parks service made a reconnaissance survey of this route. In his report he says:—

“The distance between Thompson river and Trout creek is 36 miles and this is the only stretch between Edmonton and Vancouver where an entirely new road is to be built, a remarkable fact, when the distance, some 800 miles, and the nature of the country between these two places is taken into consideration.”

Mr. Driscoll's estimate of the cost of this highway is \$1,000,000, a remarkably small sum when the results are considered. When it is realized that the twentieth century is to be the century of automobiles as the nineteenth century was the century of railways, and when the huge automobile traffic which originates along the American-Pacific coast is borne in mind, one cannot fail to be impressed with the view that a highway of this kind across the entire Rocky Mountain system will attract touring autoists in tens of thousands and thus provide huge returns upon the actual cost. The abandonment of the railway roadbeds has given Canada an extraordinary opportunity to construct a transmontane motor road. At the request of the Department of the Interior the Department of Railways is leaving the bridges, culverts, etc., on the abandoned roadbed intact. The advantages and the potentialities of this highway are bound to command attention in the years of readjustment at the conclusion of the war.

Another highway proposition which has been given consideration is one which will make available for automobiles the unparalleled scenic splendours of Glacier park made famous by the Canadian Pacific Railway “loops” in the Selkirks. The construction of the Connaught tunnel between Bear creek and Glacier has brought about



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the abandonment of the Canadian Pacific Railway tracks between these points, including Rogers pass, which was the highest point in the Canadian Pacific Railway system. With the granting of title to the railway company for the tunnel site, the old roadbed reverts to the Crown. The transformation of the roadbed into an automobile road is necessarily neither expensive nor difficult, and it will give about eighteen miles of highway among the towering peaks and marvellous icefields of the Selkirks.

#### ALIEN PRISONERS' CAMP.

Early in the summer of 1917 the last of the internment camps in the parks was closed down. This was necessitated by the release for industrial purposes of a large proportion of the alien enemies. It was not considered that the comparatively small number remaining would justify the continuation of the working camps and, therefore, the balance of the prisoners were transferred to camps in northern Ontario. While the operation of the alien camps in Revelstoke, Yoho and Jasper parks did not yield as great results as anticipated, nevertheless substantial progress was made on works that could not otherwise have been undertaken during the war.

#### UTILIZATION OF PRISON LABOUR.

In connection with the question of road construction a great deal of investigation has been made upon the subject of the utilization of jail and penitentiary prisoners with the idea that this class of labour might eventually be secured for parks work. This investigation showed that in the United States most satisfactory results have been attained in many of the states in connection with road construction by prisoners.

One of the problems which those who deal with the prisoners have to meet is the provision of suitable employment. It is now generally admitted that it is very injurious to maintain prisoners either in idleness or in unproductive labour. The difficulty is to find employment which is productive and yet which does not compete with free labour.

I understand that in so far as possible Canadian prisoners are given productive work, but I note that the superintendent of Canadian penitentiaries says in his report for 1915:—

“Our officers are obliged to utilize labour at stonebreaking and other industries that are neither desirable nor profitable. For the insufficiency of suitable and productive employment the officers are in no way responsible.”

In this connection I would point out that there is an immense field for the employment of labour in the construction of roads in Canada; that this is work which is undoubtedly both necessary and productive and which at the present time, owing to the shortage of free labour and the high cost of wages, it is almost impossible to undertake.

It is, moreover, the experience of other countries that this form of employment not only does not interfere with the ends of prison discipline but that it is the best which can be adopted, not only economically for the state, but also in securing the reformation of the prisoner.

A considerable part of the roadbuilding in the United States in recent years has been made possible by the use of convict labour and the system is gradually being adopted throughout the entire country. Ten years ago only about 1 per cent of the prison population in the United States was engaged in roadwork; to-day over 12 per cent are so employed and all but two of the states have laws authorizing its use. For the most part the system was adopted primarily, not for economic reasons, but to meet the problem stated by the superintendent of Canadian penitentiaries, the need of finding suitable and productive employment for prisoners. It was found in most



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states that the great majority of convicts were drawn from the ranks of those engaged in outdoor occupations. Their employment in prison shops had not only the disadvantage of competing with free labour but it resulted in a physical deterioration and prisoners were often unfitted when released to resume their former occupations. Prison farms, although offering suitable and healthful employment, were seldom remunerative and unless very large could not absorb all the available supply of labour. Road construction, on the other hand, is work which is very necessary to the State but which it is often impossible to undertake because of the expense involved. In addition, it has three advantages—it competes less than any other form of employment with free labour, it absorbs all available labour, and it has excellent physical and mental results in so far as the prisoners themselves are concerned.

As the system has been in practice in a number of the states for several years, under widely varying climatic and other conditions, there is now a considerable body of evidence as to its success. New Jersey, Michigan, New Mexico, Arizona, Utah, Texas, New York state, Washington, District of Columbia, Florida and Alabama all use prisoners for road construction.

Virginia employs an average of about 750 men in roadwork and is building macadam roads at a cost of \$3,400 per mile, where free labour had been costing \$4,900 per mile, a saving of \$1,500 per mile. At the last session the legislature appropriated \$250,000 for this division of the highway department. Georgia, employs approximately 5,000 of its prisoners in roadwork, South Carolina, 1,100, Louisiana, from 150 to 300. North Carolina has about 1,500 in 42 counties engaged in this form of labour, and has built 1,500 miles of hard-surfaced roads. Missouri, Greene county, has built 35 miles of standard 14-foot rock road with the aid of county prisoners at a cost of \$1,200 per mile. Colorado has been employing a daily average of about 200 men and has built over 1,000 miles of road, ranking with the best of the world, at about one-third the cost of free labour and an estimated total saving to the State of over \$1,000,000.

The general concensus of opinion appears to be that, properly conducted and operated under suitable conditions, the use of convict labour for this purpose permits of the construction of roads at a considerable saving to the state and offers the best solution with regard to the employment of prisoners.

Mr. G. P. Coleman, State Highway Commissioner for Virginia, said in his last address to the legislature:—

“I can say here, from an experience covering eleven years, that I know of no work on which convicts can be used which is of greater benefit to the state, first, in the upbuilding of the character of the criminal himself, since he soon learns that the work he is doing is of value to the state as a whole, and he takes pride in it as he grows to feel that he is instrumental in the development of the state whose law he has broken; second, in the construction and maintenance of its roads and the consequent development and expansion of the state's resources.”

Mr. J. E. Pennybacker, Chief of the Division of Road Economics, Washington, says in a recent report published by the Department of Agriculture:—

“No field can be selected in which the expenditure of prison labour can be applied with greater benefit to the state for the reason that as a whole there is no greater need than the improvement of highways. It is true that the value of such labour cannot be measured so readily in dollars and cents as the industrial labour within the penitentiary, but there is every reason to believe that, properly conducted, the roadwork may be carried on with as much efficiency as the penitentiary industries, while the former has the additional advantage of requiring no sale or transfer to place it in public use. At this point let it



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be noted, that although the convict labour, so applied, may be of very great benefit to the state, it also is of benefit to the convict himself in that it brings to him the realization he cannot grasp in the prison shop grind, that he may be of real importance in life as a producing agent."

The 1914-16 Biennial Report of the State Board of Prison Directors, California, contains the following:—

"During the last year embraced in this report the experiment of working prisoners in the construction and repair of highways in remote and sparsely settled sections of the state has been tried. The result has been gratifying. 188 prisoners from San Quentin and 60 from Folsom prison were at work on roads at the close of the fiscal year.

"The percentage of escapes has been very small. We are advised by the Highway Department that the standard of efficiency is as great, if not greater, than that of free men employed in the construction of highways. It is approximately estimated that the cost of construction is considerably less than one-half of the cost of constructing roads with free labour."

Extract from report of the state warden in connection with the above:—

"At the session of the legislature in 1915, there was passed a law providing for the use of prisoners in the building of highways. Immediately after the law became effective preparations were made for putting it into immediate operation. In September, 1915, through the co-operation of the highway commissioners and your board camps were arranged and men selected for the work. The first group of men, 47 in number, were carefully selected and sent to the camp established for them near Cummings, in Mendocino county. Following, small groups of men have been sent since that time and now, after a year's operation, more than 300 men have been sent to the camps in Mendocino county from San Quentin and out of that number only 5 have been lost by escape. At the present time 188 men are engaged in that work, and I state it conservatively when I say that from the standpoint of work accomplished and standard of conduct maintained, the men have done very well and the system of building highways by prison labour under the honour system is a success. I feel safe in saying that this plan must be developed to an extent that will make it possible to build links in the main highway and also to construct laterals in mountain counties that might remain untouched for years."

Not long ago the United States Department of Agriculture conducted an investigation into the whole question and published its findings in a special bulletin "Convict Labour for Road Work." On page 11 of this report is the following:—

"Of all the advantages that are urged in favour of roadwork as an occupation, that which carries the greatest force is that such work is undoubtedly more healthful than any form of employment which may be provided in a prison shop. Hard manual labour, in close touch with nature and its fresh air and sunshine, is universally recognized as most beneficial while continuous dwelling within doors, with only such periods of exercise as it is convenient to allow, is a most unnatural life for all but a small proportion of the State's prisoners and is observed to have a depressing effect upon the vitality of most of the convicts, with no marked good effects upon any of them."

"Aside from its deleterious physical effect the monotony of prison shop labour has a tendency to reduce the mental activity of the inmate unused to such life, and upon release, many of the members of the professional and mercantile classes find themselves no longer able to keep pace with their more alert



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competitors. Work on the roads offering as it does, a variety of employment, has no such degenerative mental effect and for this reason, is better than shop work as an occupation for about three-fourths of the prison population.'

Samuel W. Hill, the "Father of American Good Roads" declares:—

"There are four ways by means of which we may accomplish the great dream of a coherent comprehensive, national highways plan; first, through the gift of money for roadbuilding; second, through deferred taxation, bonds; third, through direct taxation; fourth, through convict labour. We in the northwest, have found the fourth most effective. It is most remunerative for the people and the men."

Julian Leavitt, July, 1913:—

"Good roads are a crying necessity in this country. But until now the cost of building them has been prohibitive. We have scarcely begun to realize that in our 1,400 prison houses we have stored the labour power of 100,000 men and boys—truly an army of liberation if applied to a good purpose."

With regard to the efficiency and discipline of these road camps, Thos. B. Tynan, Colorado, said:—

"The discipline at the camps has been as nearly perfect as possible and the effect upon the prisoners has given them superb health and has improved their physical condition. There is nothing to prevent a man's escape, should he be so inclined, yet withal, out of over 1,000 individual men in the past three years the percentage of successful escapes from our camps is less than one per cent."

The chief objections usually presented against this form of employment are:—

1. That it exposes the convict to the public gaze and so tends to harden both the public and the prisoner.
2. That it provides a greater opportunity for escape.
3. That convict labour is less efficient than free labour and that it is difficult to make prisoners work.

The first two objections have no force with regard to the proposal to utilize prisoners on roads in the parks, for the prisoners would be engaged in such remote districts that they would come in contact, practically, with no one, and the character of the country would make escape almost impossible.

With regard to the third there is a difference of opinion. As a rule the efficiency of the convict appears to depend chiefly upon the system adopted and the general spirit of the camp, due principally to the character of the camp officers. In many of the states prisoners are worked on what is known as the "honour system" and this has been found to produce the best results in the north and west. In the south where prisoners are of a lower type the "guard system" has been more successful, but where the general standards are higher, such as they are in Canada, the consensus of opinion is in favour of the honour system. By this method prisoners who have made good within prison walls are promoted to work on roads and an incentive to work is given by a system of rewards, by a deduction of so many days per month for good work and in some cases by paying them a small wage.

With regard to the comparative efficiency of convict and free labour the Chief of the Division of Road Economics states that this differs according to the class of work and general conditions. The United States Bureau of Labour has secured data in this respect from a large number of sources. In the south prison labour was found to be considerably more efficient than free labour. The New England States reported it about two-thirds as efficient; the Western States about equally efficient.



In this connection Warden Tynan of Colorado said:—

“ Personally I believe that our men have worked far more faithfully, harder and with more enthusiasm than the paid labourer would. Not that the paid labourer is to be disparaged, but the convict employed on this class of work has the following special incentives; outdoor life, sunshine, better clothing, better food and more privileges as against the walls and rigid discipline of the prison, and an additional allowance of ten days per month from his sentence, and these incentives spur the men on to work with a degree of zeal, energy and loyalty that cannot be attained by the regular grading or mining camp.”

In 1913 prison labour was employed in Arizona for the construction of the Bisbee-Tombstone highway and a comparison of the work accomplished was made with that done by free labour under the same conditions a month later. The report shows that not only was the work done by the convicts at lower unit costs but the actual work accomplished per individual in the same time was greater for convicts than for free men.

| Activity.                | July, prison labour. |                     |             | September, free labour. |                     |             |
|--------------------------|----------------------|---------------------|-------------|-------------------------|---------------------|-------------|
|                          | Total quantities.    | Quantities per man. | Unit price. | Total quantities.       | Quantities per man. | Unit price. |
|                          | Cu. yds.             | Cu. yds.            | \$ cts.     | Cu. yds.                | Cu. yds.            | \$ cts.     |
| Grading--                |                      |                     |             |                         |                     |             |
| Solid rock . . . . .     | 1,649·7              | 21·42               | 1,375 00    | 981·6                   | 13·82               | 2 13        |
| Loose rock . . . . .     | 961·3                | 12·48               | 0 59        | 521·6                   | 7·34                | 1 51        |
| Boulders . . . . .       | 829·8                | 10·78               | 0 81        | 937·9                   | 13·21               | 1 77        |
| Excavation—              |                      |                     |             |                         |                     |             |
| Solid rock . . . . .     | 389·5                | 5·06                | 1 23        | 219·1                   | 3·09                | 2 67        |
| Loose rock . . . . .     | 21·5                 | 0·28                | 1 16        | 3·0                     | 0 04                | 1 66        |
| Concrete . . . . .       | 143·4                | 1·86                | 6 00        | 65·0                    | 0·91                | 9 44        |
| Masonry . . . . .        | 44·4                 | 0·58                | 5 46        | 37·0                    | 0·52                | 6 53        |
| Ditching--               |                      |                     |             |                         |                     |             |
| Solid rock . . . . .     | 84·1                 | 1·09                | 1 52        | 21·7                    | 0·31                | 2 64        |
| Earth . . . . .          | 39·8                 | 0·52                | 0 46        | 53·0                    | 0·75                | 0 92        |
| Clearing and grubbing .. | 7·0*                 | 0·09*               | 11 31       | 3·0                     | 0·04                | 11 87       |

\*Acres.

One thing which adds to this form of labour is that it is absolutely dependable. Mr. Pennybacker says:—

“ Plans for work can be made in advance with a sure knowledge that the anticipated number of labourers will be on hand to execute them. There can be no tardiness in the convict camp such as is frequently the fault with free labour, and furthermore, the regularity of the force enables a competent overseer to develop the maximum efficiency of each man to an extent that is not possible with shifting free labour.”

In connection with its investigations the parks branch during the past winter wrote to some of the states which have been especially successful in the use of prison labour as to their opinion of its comparative efficiency. The replies received were almost invariably favourable but I have room to quote from only one or two.

Extract from letter from Harden Bennion, Secretary of State, Utah, U.S.A., dated February 14, 1918:—

“ For the past three years the state of Utah has successfully worked its convicts on the state roads and, while the expense of guarding and camp maintenance is somewhat higher than it would be if the men were confined in the



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penitentiary, yet the benefit derived from road construction accomplished, and particularly the benefit that comes to the men themselves through their being out in the open engaged in good hard work, is such that we feel abundantly justified and repaid for our efforts.

"I have been more closely associated with this work during the past year than heretofore, but for this season we have found that our prisoners do as much work man for man, as anybody we can hire.

"We have little difficulty in preventing their escape and we find that they take pride in the work accomplished and seem to feel that they are more nearly like other men and, above all, we find the men in a much better condition to be turned loose on their own responsibility at the termination of their sentence; of course, we do not take out into the camps the dangerous or vicious men."

Extract from letter from A. C. McKibbin, Secretary State Highway Board, Missouri, January 29, 1918:—

"The State Highway Department is using honour men from the Missouri State Penitentiary in road construction. This work was commenced several months ago but we have not compiled an extensive report. We have thirty men in each camp. We find the chief advantage lies in the fact that they soon become experienced roadbuilders, and take a very keen interest in their work. For example, we had occasion to make an eight-foot rock cut into nearly a quarter of a mile of solid rock in order to reduce a prohibitive grade. Three experienced miners accustomed to handling steam and air drills were assigned to this work. They accomplished wonders."

## BUFFALO.

The Buffalo herds continue to thrive and expand. The following are the figures:

| Park.                     | No. of Buffalo. |
|---------------------------|-----------------|
| Rocky Mountains.. . . . . | 8               |
| Buffalo.. . . . .         | 2,920           |
| Elk Island.. . . . .      | 161             |
|                           | <hr/>           |
|                           | 3,089           |

An increase of 545 over last year.

During the winter of 1917-18 the department abandoned the practice of putting all the animals in Buffalo park into "winter quarters" and feeding them hay. Most of the cows and younger animals were driven into winter quarters but the balance of the herd were left on the range.

It was considered that economy would be served and that at the same time the compelling of the sturdy animals to rustle for themselves in the winter would contribute to their welfare much more than if they were regularly fed hay. Of course the herds on the range were carefully watched. These animals came through the winter in remarkably fine condition. It is now felt that except under abnormal conditions they will at all times be able to care for themselves as well in winter as in summer.

## THE FUNDAMENTAL PURPOSE OF PARKS.

In each annual report in the past I have emphasized the fundamental purpose of national parks—the conservation of human vitality and efficiency in Canada. Each year that the war has been in progress accentuates the necessity of development on the lines that parks stand for. At the outbreak of the war Baden-Powell said that 1935 would show who was really victor. Each nation concerned is now expending lavishly the best it possesses in the way of human resources. The nation which devotes most



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attention to the conservation and development of the human resources which it retains is the nation that is going to stand highest in 1935. Speaking in Montreal, in 1908, Viscount Milner said:—

“I say, ultimately greatness and power rest on the welfare and contentedness of the mass of the people. And this involves so much; the physical health of men and women, with all that is necessary to ensure it: air, space, cleanliness, exercise, good houses, good food, and all that is included generally in domestic economy. Physical health first as the basis; then of course trained intelligence, the power of thought and observation, quickness of hand and eye, the development of various forms of industrial skill and so forth.”

Physical health first as the basis, then trained intelligence. It is true there are many agencies that contribute to these but none contribute more than that for which national parks exist, viz., recreation close to nature. While national parks are centres for recreation in the wilderness it is always considered that their influence must be made to extend far beyond those who visit the parks. The purpose of parks is as much to proclaim and teach the necessity of recreation everywhere as it is to provide specific areas for recreation. More and more the public are realizing that no human being can be at his best without recreation, especially recreation close to nature in the out-of-doors. People are recognizing this more perhaps from observation and experience of results than from reasoned analysis. But many acute minds have also analyzed conditions and have shown why man needs this sort of recreation and why this sort of recreation produces the results it does.

At the outset it is obvious that the tremendous commercial and economic changes brought about by civilization have radically changed man's habits of life. To-day everyone feels the everlasting urge of progress. Men of the past worked intermittently. To-day the strenuous life of civilization compels man to live under stress and tension; men by sheer will power and concentration hold themselves down for long hours to desks and machines. Their natural inclinations are inhibited and restrained. This involves continuous mental effort, nervous strain and the constant use of the higher brain centres. Such conditions result in rapid and extreme fatigue and the need for rest and relaxation of some kind becomes imperative. Otherwise there follows lowered vitality, organic and nervous disease or actual physical break-down.

It is interesting to note that investigations by the Life Extension Institute (New York) show that there is a marked decline in the power of modern workers to withstand the strain of present day life. Organic disease of all kinds is on the increase and it is appearing much earlier in life. This means that men are wearing out sooner than they used to, many of them in the prime of life. It indicates that as a race we are growing weaker.

It is possible that in a few hundred years man will have become accustomed to the new demands upon him. In the meantime he has to learn how to keep fit under existing conditions. He does this best by temporary returns to simpler and more primitive behaviour in which the nerve centres in use during his ordinary occupations are not employed. Laughter, games, sport, recreation, rest, are the natural antidotes and the best.

Laughter means relaxation, games are imitations of primitive occupations, the hunt, the chase, or tribal warfare. In these old grooves, nerves, will, and action co-ordinate with so little effort as to produce a sense of pleasure. The older, the more basic, the more primitive the brain patterns used in our hours of relaxation, the more complete our rest and enjoyment. That is why so many brain and city workers feel the absolute necessity of returning each year for a brief time to the wilderness. Man is after all an out of doors animal. For thousands of years he lived by the camp fire and got his living by hunting or fishing. Nature has been his home for countless generations and when the strain and stress of civilization grow too heavy he turns back to her and finds rest, enjoyment, and recreation.



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## APPENDIX No. 1.

## ROCKY MOUNTAINS PARK.

SUPERINTENDENT, S. J. CLARKE.

During the past year the boundaries of Rocky Mountains park were enlarged from 1,800 to 2,751 square miles. The park now extends as far as the Clearwater river to the north, and takes in the watershed of the Kananaskis to the south. Both these areas have been protected for game purposes by the parks organization since the reduction of the parks boundaries in 1911. The northern area is one of the best game districts on the eastern slope of the Rockies and a natural breeding place for sheep, goat and deer. The Kananaskis district has long been a favourite objective for visitors to Banff. The lakes are not only very beautiful, but they provide some of the best fishing to be found in this park.

During the past season over four times as many autos visited Banff as ever before. This increase was due not so much to foreign or long distance travel as to visitors from the Middle west and was largely the result of the publicity work of the Dominion Parks branch. The automobile has practically driven the more picturesque but slower tally-ho off the roads.

Owing to the small appropriation due to the war and the removal of alien prison labour to an internment camp in Ontario, little new work was undertaken, the principal being the continuation of the construction of the Castle-Lake Louise motor road.

On the Calgary-Banff motor road a gang of men was employed on the maintenance and repair of 32 miles of road between the eastern entrance of the park and Banff.

On the automobile road to Castle mountain work was opened last year on the Johnston Creek canyon. A trail was made, where that was possible, low down in the canyon and a series of rustic bridges thrown across the stream, terminating opposite the first falls about half a mile from the mouth of the canyon. This spot was the principal objective of many of the motoring parties which came into the park and during July and August it was a rare day on which fewer than fifty car-loads were carried to see the wonders of this spot.

There are at the present time 134 miles of roads in the park, including the town streets, and 337 miles of trails. In Banff, townsite and villa, there are 40,558 feet of gravel and cinder walks, and 2,688 feet of asphalt macadam walk. There are also 45,440 feet of water mains and 40,752 feet of sewer.

A number of additional street water cranes were put in during the year which enabled the street sprinkling system in Banff townsite to be extended without extra expense.

The analysis of the Banff water supply gave uniformly satisfactory results.

## FIRES.

There were no forest fires of any size notwithstanding the unusually dry season.

The two minor ones that occurred provided an excellent test of the efficiency of the portable fire pumps.

The town fire brigade fortunately had not many calls during the year. It is a voluntary organization and its membership has been very largely depleted by enlistments in the Empire's fighting forces, but its work of protection is always promptly and admirably done.



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## GAME.

All game is plentiful and elk and moose have appeared in the Park for the first time. During the year five mountain sheep were shipped to the Smithsonian Institute at Washington, D.C. During the winter the wardens destroyed 152 coyotes and 4 lynx. In the enclosure the animals are as follows: buffalo, 8; moose, 10; elk, 34; mule deer, 11; white tail deer, 2; Persian sheep, 5; angora goats, 15; Rocky Mountain sheep, 18; Rocky Mountain goat, 6; four-horned sheep, 23; yak, 19; yearling elk (brought from Gardner, Yellowstone park), 50.

The increases at the animal paddocks were: yak, 4; elk, 3 (calves); Rocky Mountain lambs, 2; Rocky Mountain goat, 3 (caught by game wardens).

## FISH HATCHERY.

This institution, under the Naval Department, is flourishing and valuable results are expected from its work.

The following fry were liberated into the lakes and streams:—

|                          |           |
|--------------------------|-----------|
| Lake Minnewanka—         |           |
| Lake herring.. . . .     | 2,189,000 |
| Atlantic salmon.. . . .  | 102,940   |
| Whisky Creek—            |           |
| Cut-throat trout.. . . . | 12,527    |

A shipment was also made to Jasper and Yoho parks during the year. The fry in hatchery at end of October numbered 308,363.

There were 4,725 visitors to the hatchery during the season.

## GOLF LINKS.

The taking over of the golf links from the hotel management of the Canadian Pacific Railway before the opening of the summer season met with the most successful results which ever attended the operation of the course, both in the matter of revenue and the number of players.

An extension of the course by another nine holes was begun in the early summer, making use of alien labour for this purpose, but the work was postponed, when the alien camp closed down. At the end of the season, however, a gang of workmen was put on and excellent progress made.

## LICENSESES.

A statement of the licenses issued shows:—

|                                |       |
|--------------------------------|-------|
| Autos.. . . .                  | 1,756 |
| Livery (horse).. . . .         | 13    |
| Boats of various sorts.. . . . | 53    |
| Miscellaneous.. . . .          | 388   |

Seventy-one grazing and 114 timber permits were also issued.

The auto licenses show a considerable increase over last year.

There was very little building done during the season. The number of permits issued was 23, covering an estimated total expenditure of \$16,630.

An excellent camping ground was laid out at the junction of the Bow and Spray rivers and was very popular. Seventy-three permits, exclusive of those to visitors during the auto week, were issued.



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## WINTER CARNIVAL.

The second winter carnival, with its ice palace and sports, was held at Banff, February 8-18, and proved a great success. Probably there is no place in Canada which is so ideally situated or possesses so many natural attractions as Banff. It therefore seems possible that when the war is over and things return to a more normal condition, the town may become not only the mecca for the summer tourist but also the winter play-ground for all America.

## THE BATH HOUSES.

These were well patronized. The number of bathers at the upper hot springs during the past year was nearly 27,000, the largest on record.

At the cave and basin there were 35,411 bathers; 34,048 paying and 1,363 free. This was an increase of 6,773 over the previous year.

## HEALTH.

Public health in the park was uniformly good. During the year Dr. R. H. Brett was appointed parks medical health officer. He will undertake duties of a nature intended to prevent outbreaks of infectious disease and otherwise help the administration in the general maintenance of the health of the park.

## THE BANFF MUSEUM.

The museum under Curator N. B. Sanson did good work during the year, and added a number of interesting specimens to its well arranged exhibits.

## THE ALPINE CLUB OF CANADA.

*The Banff Club House.*

The Alpine club house was open as usual during June, July, August and September, to members and their friends. Many inquiries were received about the geography of the country and the possibility of expeditions outside the conventional drives organized by the transportation companies.

The second ascent of mount Louise was made and declared to be the hardest rock climb the Rockies or Selkirks known to the climbers, Mr. V. A. Flynn of the English and Canadian Alpine clubs and Edward Feuz, the Swiss guide.

Mount Rundle was climbed and the trip to and through Johnson canyon found to be most attractive. The river grows in popularity. From it are undoubtedly obtained the finest views of the mountains within easy reach.

At Lake Louise the usual ascents were made. Mr. Flynn, with Rudolph Aemmer, made the summits of mounts Lefroy and Victoria in one long day, the first time such an expedition had been attempted.

The visitors to the club house were drawn from every province in Canada from as far east as New York and New England in the United States.



APPENDIX No. 1a.

STATEMENTS OF PERSONS REGISTERED AT THE VARIOUS HOTELS  
IN THE ROCKY MOUNTAINS PARK DURING THE PERIOD FROM 1st  
APRIL, 1917, TO 31st MARCH, 1918.

|  |       |  |             |
|--|-------|--|-------------|
| HOT SPRINGS HOTEL (open all year).   |       | BANFF SPRINGS HOTEL, Banff, Alta.,<br>Seasons 1916 and 1917. |             |
| Canada.. . . .   | 546   | 1916.  | 1917.       |
| United States.. . . .  | 15    |  |             |
| Other countries.. . . .  | 3     | Manitoba.. . . .   | 22 61       |
|  | 558   | (Winnipeg) .. . . .  | 355 574     |
|  |       | Saskatchewan .. . . .  | 189 331     |
|  |       | Alberta.. . . .  | 1,427 1,818 |
|  |       | British Columbia.. . . .                                     | 210 254     |
|  |       | Total.. . . .  | 2,203 3,038 |
|  |       | Increase.. . . .   | 835         |
| MOUNT ROYAL HOTEL, from May 1, 1917,<br>to October 15, 1917.                                   |       | Newfoundland.. . . .   | 3 —         |
| Total visitors, 5,150.   |       | Prince Edward Island.. . . .                                 | 6 8         |
| (This hotel does not keep any record of the<br>nationality of its visitors.)                   |       | Nova Scotia.. . . .  | 7 25        |
|  |       | New Brunswick.. . . .  | 11 30       |
|  |       | Quebec.. . . .   | 244 232     |
|  |       | Ontario.. . . .  | 487 567     |
|  |       | Total.. . . .  | 758 862     |
|  |       | Increase.. . . .   | 104         |
| ALBERTA HOTEL (open all year).   |       | Maine.. . . .  | 24 16       |
| Canada.. . . .   | 3,845 | New Hampshire.. . . .  | 11 5        |
| United States.. . . .  | 610   | Vermont .. . . .   | 11 13       |
| Other countries.. . . .  | 18    | Massachusetts .. . . .                                       | 312 107     |
|  | 4,473 | (Boston) .. . . .  | 206 172     |
|  |       | Connecticut .. . . .   | 114 61      |
|  |       | Rhode Island.....  | 44 25       |
|  |       | New York State.. . . .                                       | 295 233     |
|  |       | (New York City) .. . . .                                     | 1,234 781   |
|  |       | Pennsylvania.. . . .   | 224 70      |
|  |       | (Pittsburg).. . . .  | 38 73       |
|  |       | (Philadelphia).. . . .                                       | 296 168     |
|  |       | New Jersey.. . . .   | 195 150     |
|  |       | Delaware.. . . .   | 17 4        |
|  |       | Maryland.. . . .   | 82 36       |
|  |       | District of Columbia .. . . .                                | 84 99       |
|  |       | West Virginia .. . . .                                       | 24 12       |
|  |       | Virginia.. . . .   | 72 20       |
|  |       | Total.. . . .  | 3,283 2,045 |
|  |       | Decrease.. . . .   | 1,238       |
| HOMESTEAD HOTEL (open during summer<br>months only).   |       | Kentucky.. . . .   | 52 26       |
| Canada.. . . .   | 2,412 | Tennessee.. . . .  | 51 30       |
| United States .. . . .   | 658   | North Carolina.. . . .                                       | 6 7         |
| Great Britain.. . . .  | 3     | South Carolina.. . . .                                       | 9 3         |
| Other countries.. . . .  | 12    | Georgia.. . . .  | 40 13       |
|  | 3,085 | Alabama.. . . .  | 37 27       |
|  |       | Mississippi.. . . .  | 12 12       |
|  |       | Louisiana.. . . .  | 31 39       |
|  |       | Florida.. . . .  | 10 3        |
|  |       | Total.. . . .  | 248 160     |
|  |       | Decrease.. . . .   | 88          |
| SANATARIUM HOTEL.  |       |  |             |
| No records were kept by this hotel during<br>the season. Estimated number of guests,<br>5,000. |       |  |             |
| KING EDWARD HOTEL, from April 1, 1917,<br>to March 31, 1918.                                   |       |  |             |
| Canada.. . . .   | 5,253 |  |             |
| United States.. . . .  | 605   |  |             |
| England.. . . .  | 25    |  |             |
| Australia.. . . .  | 30    |  |             |
| China.. . . .  | 8     |  |             |
| New Zealand.. . . .  | 4     |  |             |
| India.. . . .  | 4     |  |             |
| Hawaii.. . . .   | 4     |  |             |
| Scotland.. . . .   | 3     |  |             |
| Java .. . . .  | 3     |  |             |
| Holland.. . . .  | 2     |  |             |
| Wales.. . . .  | 1     |  |             |
| Korea.. . . .  | 1     |  |             |
| Germany.. . . .  | 1     |  |             |
|  | 5,944 |  |             |



## SESSIONAL PAPER No. 25

BANFF SPRINGS HOTEL Banff, Alta.,  
Seasons, 1916 and 1917—*Continued.*

|                         | 1916. | 1917. |
|-------------------------|-------|-------|
| Ohio.. . . .            | 115   | 151   |
| (Cleveland) .. . . .    | 134   | 62    |
| (Cincinnati) .. . . .   | 74    | 54    |
| Michigan.. . . .        | 91    | 51    |
| (Detroit) .. . . .      | 168   | 87    |
| Indiana.. . . .         | 95    | 56    |
| (Indianapolis) .. . . . | 39    | 12    |
| Illinois.. . . .        | 218   | 106   |
| (Chicago) .. . . .      | 697   | 499   |
| Iowa .. . . .           | 118   | 48    |

|               |       |       |
|---------------|-------|-------|
| Total.. . . . | 1,599 | 1,126 |
|---------------|-------|-------|

|                  |     |  |
|------------------|-----|--|
| Decrease.. . . . | 473 |  |
|------------------|-----|--|

|                        |     |    |
|------------------------|-----|----|
| Missouri.. . . .       | 46  | 30 |
| (St. Louis) .. . . .   | 107 | 76 |
| (Kansas City) .. . . . | 45  | 47 |
| Kansas.. . . .         | 32  | 26 |
| Arkansas.. . . .       | 10  | 9  |
| Oklahoma.. . . .       | 15  | 33 |
| Nebraska.. . . .       | 37  | 32 |
| (Omaha) .. . . .       |     | 16 |
| Texas.. . . .          | 73  | 52 |

|               |     |     |
|---------------|-----|-----|
| Total.. . . . | 365 | 321 |
|---------------|-----|-----|

|                  |    |  |
|------------------|----|--|
| Decrease.. . . . | 44 |  |
|------------------|----|--|

|                        |     |     |
|------------------------|-----|-----|
| Wisconsin.. . . .      | 74  | 61  |
| (Milwaukee) .. . . .   | 74  | 39  |
| Minnesota.. . . .      | 64  | 36  |
| (Minneapolis) .. . . . | 159 | 167 |
| (St. Paul) .. . . .    | 63  | 45  |
| North Dakota.. . . .   | 30  | 30  |
| South Dakota .. . . .  | 4   | 4   |

|               |     |     |
|---------------|-----|-----|
| Total.. . . . | 468 | 382 |
|---------------|-----|-----|

|                  |    |  |
|------------------|----|--|
| Decrease.. . . . | 86 |  |
|------------------|----|--|

|                          |     |     |
|--------------------------|-----|-----|
| Washington.. . . .       | 182 | 149 |
| Oregon.. . . .           | 110 | 74  |
| California.. . . .       | 293 | 249 |
| (San Francisco) .. . . . | 191 | 218 |
| (Los Angeles) .. . . .   | 229 | 145 |

|               |       |     |
|---------------|-------|-----|
| Total.. . . . | 1,005 | 835 |
|---------------|-------|-----|

|                  |     |  |
|------------------|-----|--|
| Decrease.. . . . | 170 |  |
|------------------|-----|--|

|                  |    |    |
|------------------|----|----|
| Nevada.. . . .   |    | 11 |
| Montana.. . . .  | 26 | 8  |
| Idaho.. . . .    | 2  | 9  |
| Colorado.. . . . | 20 | 12 |
| Utah.. . . .     | 6  | 2  |
| Arizona.. . . .  | 12 | 6  |

|               |    |    |
|---------------|----|----|
| Total.. . . . | 66 | 48 |
|---------------|----|----|

|                  |    |  |
|------------------|----|--|
| Decrease.. . . . | 18 |  |
|------------------|----|--|

|                                     |    |    |
|-------------------------------------|----|----|
| Alaska.. . . .                      | 3  | 1  |
| West Indies.. . . .                 | 13 | 10 |
| Java.. . . .                        |    | 18 |
| Mexico and Central America .. . . . | 2  | 6  |
| South America.. . . .               | 7  | 7  |
| Total.. . . .                       | 25 | 42 |

|                  |  |    |
|------------------|--|----|
| Increase.. . . . |  | 17 |
|------------------|--|----|

BANFF SPRINGS HOTEL, Banff, Alta.,  
Seasons, 1916 and 1917—*Concluded.*

|                                   | 1916. | 1917. |
|-----------------------------------|-------|-------|
| England .. . . .                  | 85    | 50    |
| Ireland.. . . .                   | 4     | 2     |
| Scotland.. . . .                  | 12    | 2     |
| France.. . . .                    | 10    | 21    |
| Holland.. . . .                   | 7     | 70    |
| Other European countries. . . . . | 14    | 13    |

|               |     |     |
|---------------|-----|-----|
| Total.. . . . | 132 | 158 |
|---------------|-----|-----|

|                   |    |  |
|-------------------|----|--|
| Increase .. . . . | 26 |  |
|-------------------|----|--|

|                             |     |    |
|-----------------------------|-----|----|
| Australia.. . . .           | 112 | 70 |
| New Zealand.. . . .         | 49  | 13 |
| China.. . . .               | 50  | 44 |
| India.. . . .               | 27  | 17 |
| Hawaii.. . . .              | 41  | 17 |
| Philippine Islands.. . . .  | 14  | 18 |
| Japan.. . . .               | 26  | 18 |
| Africa.. . . .              | 5   | 2  |
| Asia.. . . .                | 5   | —  |
| Persia.. . . .              | 2   | —  |
| Straits Settlements.. . . . | 14  | 9  |

|               |     |     |
|---------------|-----|-----|
| Total.. . . . | 345 | 208 |
|---------------|-----|-----|

|                  |     |  |
|------------------|-----|--|
| Decrease.. . . . | 137 |  |
|------------------|-----|--|

|                   |     |    |
|-------------------|-----|----|
| Unlocated.. . . . | 121 | 70 |
|-------------------|-----|----|

*Conducted Parties (otherwise unlocated).*

|                               |    |    |
|-------------------------------|----|----|
| Raymond & Whitcomb. . . . .   | 56 | 40 |
| Thos. Cook & Sons.... . . . . | 20 | —  |
| G. K. & B.. . . .             | 48 | 37 |
| Various parties.. . . .       | 73 | 42 |

|               |     |     |
|---------------|-----|-----|
| Total.. . . . | 197 | 119 |
|---------------|-----|-----|

|                   |    |  |
|-------------------|----|--|
| Decrease .. . . . | 78 |  |
|-------------------|----|--|

|                     |  |        |
|---------------------|--|--------|
| Total, 1916.. . . . |  | 10,812 |
|---------------------|--|--------|

|                     |  |       |
|---------------------|--|-------|
| Total, 1917.. . . . |  | 9,414 |
|---------------------|--|-------|

|                  |  |       |
|------------------|--|-------|
| Decrease.. . . . |  | 1,398 |
|------------------|--|-------|

CHATEAU LAKE LOUISE, Lake Louise,  
Alta.—Seasons, 1916 and 1917.

|                           | 1916. | 1917. |
|---------------------------|-------|-------|
| Manitoba.. . . .          | 39    | 21    |
| (Winnipeg) .. . . .       | 203   | 222   |
| Saskatchewan .. . . .     | 319   | 128   |
| Alberta .. . . .          | 721   | 504   |
| British Columbia. . . . . | 158   | 164   |

|               |       |       |
|---------------|-------|-------|
| Total.. . . . | 1,440 | 1,039 |
|---------------|-------|-------|

|                  |  |     |
|------------------|--|-----|
| Increase.. . . . |  | 401 |
|------------------|--|-----|

|                              |     |     |
|------------------------------|-----|-----|
| Prince Edward Island.. . . . | 3   | 2   |
| Nova Scotia.. . . .          | 17  | 11  |
| New Brunswick.. . . .        | 23  | 19  |
| Quebec.. . . .               | 122 | 170 |
| Ontario.. . . .              | 417 | 447 |

|               |     |     |
|---------------|-----|-----|
| Total.. . . . | 582 | 649 |
|---------------|-----|-----|

|                  |    |  |
|------------------|----|--|
| Decrease.. . . . | 67 |  |
|------------------|----|--|



CHATEAU LAKE LOUISE, Lake Louise,  
Alta.—Seasons, 1916 and 1917—Continued.

|                            | 1916. | 1917. |
|----------------------------|-------|-------|
| Maine.. . . .              | 22    | 26    |
| New Hampshire.. . . .      | 4     | 32    |
| Vermont.. . . .            | 13    | 15    |
| Massachusetts.. . . .      | 184   | 328   |
| (Boston).. . . .           | 192   | 309   |
| Connecticut.. . . .        | 87    | 162   |
| Rhode Island.. . . .       | 43    | 93    |
| New York State.. . . .     | 235   | 348   |
| (New York City) .. . .     | 908   | 1,272 |
| Pennsylvania.... .         | 92    | 206   |
| (Pittsburg).. . . .        | 91    | 114   |
| (Philadelphia) .. . .      | 202   | 328   |
| New Jersey.. . . .         | 183   | 216   |
| Delaware.. . . .           | 4     | 14    |
| Maryland.. . . .           | 34    | 93    |
| District of Columbia.. . . | 51    | 109   |
| West Virginia.. . . .      | 23    | 27    |
| Virginia.. . . .           | 25    | 66    |
| Total.. . . .              | 2,393 | 3,758 |
| Decrease.. . . .           | 1,365 |       |
| Kentucky.. . . .           | 36    | 69    |
| Tennessee.. . . .          | 34    | 75    |
| North Carolina.. . . .     | 10    | 11    |
| South Carolina.. . . .     | 2     | 9     |
| Georgia.. . . .            | 55    | 59    |
| Alabama.. . . .            | 27    | 27    |
| Mississippi.. . . .        | 7     | 11    |
| Louisiana.. . . .          | 35    | 43    |
| Florida.. . . .            | 10    | 27    |
| Total.. . . .              | 194   | 331   |
| Decrease.. . . .           | 137   |       |
| Ohio.. . . .               | 200   | 284   |
| (Cleveland).. . . .        | 75    | 156   |
| (Cincinnati).. . . .       | 63    | 102   |
| Michigan.. . . .           | 114   | 151   |
| (Detroit).. . . .          | 73    | 124   |
| Indiana.. . . .            | 82    | 141   |
| (Indianapolis).. . . .     | 32    | 61    |
| Illinois.. . . .           | 223   | 346   |
| (Chicago).. . . .          | 623   | 801   |
| Iowa.. . . .               | 181   | 249   |
| Total.. . . .              | 1,646 | 2,415 |
| Decrease.. . . .           | 769   |       |
| Missouri.. . . .           | 42    | 50    |
| (St. Louis).. . . .        | 88    | 132   |
| (Kansas City).. . . .      | 75    | 64    |
| Kansas.. . . .             | 40    | 54    |
| Arkansas.. . . .           | 11    | 14    |
| Oklahoma.. . . .           | 39    | 24    |
| Nebraska.. . . .           | 49    | 83    |
| (Omaha).. . . .            | 38    | 27    |
| Texas.. . . .              | 79    | 87    |
| Total.. . . .              | 461   | 535   |
| Decrease.. . . .           | 74    |       |
| Wisconsin.. . . .          | 96    | 128   |
| (Wilwaukee).. . . .        | 60    | 101   |
| Minnesota.. . . .          | 50    | 125   |
| (Minneapolis).. . . .      | 222   | 356   |
| (St. Paul) .. . .          | 54    | 98    |
| North Dakota.. . . .       | 43    | 30    |
| South Dakota.. . . .       | 10    | 19    |
| Total.. . . .              | 535   | 857   |
| Decrease.. . . .           | 322   |       |

CHATEAU LAKE LOUISE, Lake Louise,  
Alta.—Seasons, 1916 and 1917—Concluded.

|  | 1916. | 1917.  |
|--|-------|--------|
| Washington.. . . .                       | 208   | 340    |
| Oregon.. . . .                           | 123   | 184    |
| California.. . . .                       | 466   | 504    |
| (San Francisco).. . . .                  | 276   | 281    |
| (Los Angeles) .. . .                     | 243   | 409    |
| Nevada.. . . .                           | 8     | 3      |
| Total.. . . .                            | 1,324 | 1,721  |
| Decrease.. . . .                         | 397   |        |
| Montana.. . . .                          | 6     | 15     |
| Idaho.. . . .                            | 10    | 8      |
| Wyoming.. . . .                          | 1     | —      |
| Colorado.. . . .                         | 16    | 19     |
| Utah.. . . .                             | —     | 8      |
| Arizona.. . . .                          | 6     | 9      |
| Total.. . . .                            | 39    | 59     |
| Decrease.. . . .                         | 20    |        |
| West Indies.. . . .                      | 5     | 19     |
| Mexico and Central America .             | 1     | 3      |
| South America .. . .                     | 4     | 8      |
| Total.. . . .                            | 10    | 30     |
| Decrease.. . . .                         | 20    |        |
| England.. . . .                          | 34    | 66     |
| Scotland.. . . .                         | 3     | 12     |
| Ireland.. . . .                          | 2     | —      |
| France.. . . .                           | 2     | 13     |
| Italy.. . . .                            | —     | 2      |
| Switzerland.. . . .                      | —     | 2      |
| Holland .. . . .                         | 65    | 7      |
| Other European countries. . .            | 14    | 3      |
| Total.. . . .                            | 120   | 105    |
| Increase.. . . .                         | —     | 15     |
| Australia.. . . .                        | 66    | 102    |
| New Zealand.. . . .                      | 50    | 34     |
| China.. . . .                            | 60    | 55     |
| India.. . . .                            | 11    | 15     |
| Hawaii.. . . .                           | 35    | 38     |
| Philippine Islands.. . . .               | 12    | 20     |
| Africa.. . . .                           | 7     | 6      |
| Japan.. . . .                            | 17    | 20     |
| Straits Settlements.. . . .              | 10    | 13     |
| Total.. . . .                            | 268   | 303    |
| Decrease .. . . .                        | 35    |        |
| Conducted Parties (otherwise unlocated). |       |        |
| Raymond & Whitcomb. . . .                | 10    | 37     |
| G. K. & B.. . . .                        | 52    | 78     |
| Various.. . . .                          | 20    | 85     |
| Total.. . . .                            | 82    | 200    |
| Decrease. . . . .                        | 118   |        |
| Unlocated.. . . .                        | 61    | 64     |
| Total, 1916.. . . .                      | —     | 12,066 |
| Total, 1917.. . . .                      | —     | 9,155  |
| Decrease.. . . .                         | —     | 2,911  |



## SUMMARY.

|  |        |
|--|--------|
| Banff Springs Hotel.. . . . .          | 9,414  |
| Lake Louise Chalet.. . . . .           | 9,155  |
| Hot Springs Hotel.. . . . .            | 558    |
| Mount Royal Hotel.. . . . .            | 5,150  |
| Alberta Hotel.. . . . .                | 4,473  |
| Homestead Hotel.. . . . .              | 3,085  |
| Sanitarium (estimated).. . . . .       | 5,000  |
| King Edward Hotel.. . . . .            | 5,944  |
| Summer Cottagers and Campers.. . . . . | 8,000  |
| Excursionists (estimated).. . . . .    | 7,000  |
| Motorists.. . . . .                    | 10,000 |
|  | <hr/>  |
| Total previous year.. . . . .          | 67,779 |
|  | <hr/>  |
| Increase.. . . . .                     | 57,250 |
|  | <hr/>  |
|  | 10,529 |

## MONTHLY PRECIPITATION.

| Month.              |       |       |        |
|---------------------|-------|-------|--------|
| 1917.               | Rain. | Snow. | Total. |
| January . . . . .   | ..... | 7.3   | 0.73   |
| February . . . . .  | ..... | 3.45  | 0.34   |
| March. . . . .      | ..... | 11.3  | 1.13   |
| April.. . . . .     | R.    | 8.0   | 0.80   |
| May . . . . .       | 2.29  | 9.9   | 3.28   |
| June.. . . . .      | 2.80  | 1.5   | 2.95   |
| July . . . . .      | 0.46  | ..... | 0.46   |
| August.. . . . .    | 1.87  | ..... | 1.87   |
| September . . . . . | 1.10  | ..... | 1.10   |
| October . . . . .   | 0.52  | 5.7   | 1.09   |
| November . . . . .  | 0.27  | 0.35  | 0.31   |
| December . . . . .  | 0.27  | 31.5  | 3.41   |
|                     | <hr/> | <hr/> | <hr/>  |
|                     | 9.58  | 79.00 | 17.47  |

Total annual precipitation—17.47.

|                    |      |      |      |
|--------------------|------|------|------|
| 1918.              |      |      |      |
| January . . . . .  | 0.09 | 7.9  | 0.88 |
| February . . . . . | 0.61 | 19.4 | 1.95 |
| March. . . . .     | 0.65 | 1.42 | 1.46 |

## MONTHLY MAXIMUM AND MINIMUM TEMPERATURES.

| Month.             |          |               |
|--------------------|----------|---------------|
| 1917.              | Maximum. | Mini-<br>mum. |
| January.. . . . .  | 39.8     | —38.0         |
| February . . . . . | 44.2     | —43.5         |
| March . . . . .    | 42.3     | —11.1         |
| April . . . . .    | 49.0     | — 4.7         |
| May. . . . .       | 71.2     | 16.9          |
| June.. . . . .     | 77.6     | 29.2          |
| July.. . . . .     | 90.1     | 35.0          |
| August. . . . .    | 84.0     | 29.8          |
| September. . . . . | 75.6     | 25.3          |

MONTHLY MAXIMUM AND MINIMUM TEMPERATURE.—*Con.*

| 1917.                         |  | Maximum. | mini-<br>mum. |
|-------------------------------|--|----------|---------------|
| Month.                        |  |          |               |
| October. . . . .              |  | 66.8     | 6.8           |
| November.. . . . .            |  | 56.0     | 15.8          |
| December.. . . . .            |  | 44.2     | —29.9         |
| 1918.                         |  |          |               |
| January. . . . .              |  | 48.2     | —39.9         |
| February . . . . .            |  | 37.0     | —30.7         |
| March . . . . .               |  | 51.0     | —31.0         |
| Yearly maximum for 1917—90.1. |  |          |               |
| Yearly minimum for 1917—43.5. |  |          |               |

## MONTHLY AVERAGE TEMPERATURE.

| Month.              |          |
|---------------------|----------|
| 1917.               | Average. |
| January.. . . . .   | 11.4     |
| February.. . . . .  | 12.7     |
| March.. . . . .     | 20.1     |
| April.. . . . .     | 31.9     |
| May.. . . . .       | 44.5     |
| June.. . . . .      | 50.0     |
| July.. . . . .      | 60.5     |
| August.. . . . .    | 56.4     |
| September.. . . . . | 48.9     |
| October.. . . . .   | 38.2     |
| November.. . . . .  | 35.1     |
| December.. . . . .  | 9.9      |

Average annual monthly temperature—  
35.0.

|                    |      |
|--------------------|------|
| 1918.              |      |
| January.. . . . .  | 14.7 |
| February.. . . . . | 14.2 |
| March. . . . .     | 26.0 |



## APPENDIX No. 2.

## YOHO PARK.

SUPERINTENDENT E. N. RUSSELL, FIELD, B.C.

## WORK OF THE YEAR.

Early in the year, the usual spring cleaning was done in the townsite of Field, and necessary repairs were made to the sidewalks, and streets.

Some protection work to the bank of the creek at the back of the townsite was also done, as it was considered that the creek might break through and flood the town. Repairs were made to the high bridge at Ottertail over the Ottertail river, and also to the Ottertail and Emerald Lake roads.

## ROADS AND TRAILS.

Work was continued on the Ottertail Natural Bridge road. About  $2\frac{1}{2}$  miles of grading was completed. This road will connect the abandoned railway grade at Ottertail, now used as a highway, with the Emerald Lake road at a point near the Natural Bridge. When completed it will be a drive full of unsurpassed scenery. The road will be the only loop drive in the park, and have a total length of from fourteen to fifteen miles.

Necessary repairs were made on all existing trails, and visitors report that they were never in such good condition.

## FIRE PROTECTION.

There were no serious losses from forest fires. The portable pumping unit proved of great assistance in fire fighting. For better fire protection a telephone line has been constructed linking up the outlying districts with the central office.

## ALPINE CLUB.

The twelfth annual meeting of the Alpine Club of Canada was held in Yoho park during the summer. The camp was pitched in the valley of Cataract creek, about three miles from Hector station, and all the arrangements were excellently carried out. The attendance was slightly better than last year and was considered very satisfactory in view of the times.

## FISH.

A beginning was made this year towards stocking some of the lakes in the park with fish, and 30,000 cut-throat trout fry were obtained from the hatchery at Banff of which 10,000 were placed in Wapta Lake, near Hector, and 20,000 in Emerald lake. In a few years time the park should have the best of fishing to offer.



## APPENDIX No. 2a.

## THE ALPINE CLUB OF CANADA.

## CAMP IN CATARACT VALLEY. S. H. MITCHELL, SECRETARY.

The twelfth annual camp of the Alpine Club of Canada was held in the valley of of Cataract brook, about three miles south of Hector, from July 17 to 31. Though a camp had been held there as lately as July, 1913, the neighbourhood proved full of attraction. Ninety-one members in all were placed under canvas, a satisfactory attendance considering how heavily the war has drawn on the club.

Since the former camp the stream flowing from the glacier by the "Watch Tower" of Mount Victoria has washed down much rock and gravel and tents had to be pitched a little farther north. A subsidiary camp was placed in the open meadow near lake O'Hara where the club held its famous camp of 1909. Tents were also pitched in Paradise valley for the convenience of those who made the journey over the Abbot, Mitre, Wastach, Wenkchemna and Opabin passes.

For the greater part of the time the weather was perfect and the following mountains were climbed: Hungabee, Huber, Odaray, Cathedral, a peak of Victoria ridge, south of Popes peak, and Schaeffer. The Vanguard peak of mount Cathedral proved a most excellent rock climb, and lake McArthur and Oesa were visited by various parties, as well as Sherbrooke lake. Twenty-one members graduated to active membership on the various peaks.

Dr. Hickson travelled up the north fork of the Illicillewaet and conquered the hitherto unclimbed mount Moloch. Mount Sir Donald was climbed by the northwest arete and several other less important ascents made by members.

Mr. L. O. Armstrong, the veteran lecturer on the attractions of Canada, an original member of the club, was present in camp, gathering new material on every side. Unfortunately Mr. A. D. Kean, the well-known cowboy, now a moving picture expert, who collaborates with Mr. Armstrong, was detained in a lighthouse on the Pacific coast by stress of weather, and only arrived in camp as the weather was breaking. However, some photographs were obtained of mountaineering which will set an original seal on Mr. Armstrong's next set of lectures.

Miss A. Peck, well known in mountaineering circles, from her climb of mount Huascaran in South America, was also in camp, but unfortunately experienced the only spell of bad weather and was unable to climb.

From the annual meeting a resolution of sympathy and admiration was sent to the club members at the front, whose record of distinction is a remarkable one.

There were present members of the English, Swiss and American Alpine clubs, and of the Royal Geographical Society.



## APPENDIX No. 3.

## GLACIER PARK.

SUPERINTENDENT, E. N. RUSSELL.

In this park all the trails have been cleared out and repaired, and the bridges over the Beaver river and Grizzly creek renewed. A gang of men also cleared the large rock slides off the road to the Nakimu caves.

Upon the completion of the Canadian Pacific Railway tunnel the old roadbed through the park was taken over by the park authorities. It includes the famous "Loops in the Selkirks," and the road when completed will make a carriage drive of unequalled interest.

The townsites at both ends of the Connaught tunnel, now no longer occupied by the railway contractors, have been thoroughly cleaned up, as has also the old townsite of Rogers pass. All buildings have been pulled down with the exception of the round-house, whose concrete walls are still standing.

## APPENDIX No. 4.

## REVELSTOKE PARK.

ACTING SUPERINTENDENT, E. N. RUSSELL.

Owing to the war, little has been done in the way of development with the exception of work on the motor road. This road will give access to the summit from Revelstoke, and its total length when finished will be seventeen miles.

## WORK OF THE YEAR.

In the spring the precaution of clearing out obstructed water channels and culverts prevented a number of washouts on the motor road.

General repairs were made on the portions already built, and the construction of the Bridge Creek bridge was continued. This is a solid structure, one hundred feet in length. From this point the road was cut out and graded, side ditches made, bridges and culverts constructed, etc., as far as station 645.

## SPORTS.

During the year the Revelstoke Ski Club which held a certain area of land adjacent to the southern boundary of the park, have, by their own wish, had this area included within the park limits, and in the fall of the year the department undertook certain improvements to the jump which have made it one of the finest in the world. This club has done much to bring Revelstoke and the park into prominence as the home of winter sports.

## TELEPHONES.

The telephone line was extended to the site of the road camp at Bridge creek and a connection made with the warden's cabin on the auto road. This telephone line proved invaluable in carrying on the work of road construction. It is hoped next year to extend it to the summit of the mountain, where it is suggested a cabin should be erected for the use of the warden in connection with his patrol work.

## VISITORS.

Among the distinguished visitors to the park this year were His Excellency the Duke of Devonshire and party, who were driven up the auto road as the guests of the city of Revelstoke.



## APPENDIX No. 5.

## JASPER PARK.

SUPERINTENDENT, LT.-COL. S. M. ROGERS, JASPER. ALTA.

Owing to the restricted appropriation, little work was undertaken in Jasper park during the year, attention being chiefly concentrated on keeping the existing roads, trails and bridges in repair.

There are over 400 miles of trails in Jasper park which give access to practically all the important scenic points, and nearly 100 miles of roads.

The great need of keeping the trails open was emphasized by two forest fires during the summer in the northeast corner of the park. So far as could be ascertained, both fires were caused by lightning.

Several smaller fires along the railway emphasizes the desirability of having all engines passing through the mountains converted into oil burners.

## FISHING.

The supply of game fish in the park appears to be increasing and young fry were also secured from the Department of Fisheries. Pyramid and Jack lakes are both excellent fishing grounds; in the former 10-pound trout were caught early in the season and later 8 and 6 pounders were common. Caledonia lake can almost always be depended on for a good catch of rainbow trout.

## WILD LIFE.

The game is noticeably increasing and thanks to the efficiency of the wardens' service the coyote pest has been greatly reduced.

## MOTOR HIGHWAY.

The abandonment of over 200 miles of railway opens the way for a possible motor highway through the park. An automobile road from Edmonton to Jasper has long been under discussion and would involve few difficulties in the way of construction. The road would bring the park within easy reach of thousands in the prairie provinces.

## ACCOMMODATION.

At present Jasper park suffers, from the tourists' point of view, from the absence of a hotel. The Grand Trunk Pacific Railway Company, some years ago, had plans drawn up for a million dollar building but the outbreak of the war put an end to the project. To meet the needs of the travelling public the company has maintained for the past three years, a very comfortable "tented city" on the shores of lac Beauvert.



## APPENDIX No. 6.

## WATERTON LAKES PARK.

SUPERINTENDENT, ROBT. COOPER, WATERTON PARK, ALBERTA.

Owing to the need for the strictest economy, little new work was undertaken. Special effort was made, however, to put the park roads into good condition. As a result of this and also of the publicity campaign conducted in Alberta during the spring, the tourist traffic to the park was much larger than in former years.

Further repair work was also done on the Oil City Boundary road—which was gone over last year as far as Oil City. This year the work was continued to the British Columbia boundary.

Where this road crosses the Blakiston brook, or Pass creek, a bridge is urgently needed. When built it will greatly increase the traffic along this thoroughfare. The road, which should be widened and straightened in many places, leads through some of the best scenery in this section. It is also the only road in the park which takes one back into the so-called hinterland, and its accessibility by automobile will no doubt be largely taken advantage of.

## IMPROVEMENT WORK.

Two branch telephone lines were built during the season and two partly constructed, making a total length of about 24½ miles.

Fallen timber was cleared from the trails already in existence but no new trails were constructed.

A number of new buildings were erected including several summer cottages and two or three buildings for business purposes.

Practically all the lots in the townsite, of any value as building sites for cottages, were disposed of.

## CAMPING GROUND.

A small appropriation was authorized during the year for the enlargement of the camping grounds, and good headway was made in clearing it.

As the hotel accommodation in this park is limited, the camping grounds are frequently overcrowded. Although there are many other places where one can pitch a tent the ideal camping ground is near the Cameron falls amongst the pine trees. This is close to the townsite and has everything essential to a perfect camping ground, water, trees, view, etc.

## GAME PROTECTION.

The big game in the park is very plentiful and increasing each year. Considerable trouble was experienced with wolves and coyotes and a vigorous campaign is being conducted to rid the park of these predatory animals.

The lakes and rivers swarm with ducks, geese and other feathered game. The geese remain until very late in the season, and last fall they did not leave until nearly Christmas.



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## FIRE.

Owing to the efficiency of fire protection, no fires of any importance occurred during the year. This is all the more satisfactory in view of the large number of campers and wood haulers in the park at all times of the year.

## GRAZING AND TIMBER.

The grazing privileges are in great demand at all times. There were approximately 3,300 head of stock grazed in the park under permit.

The demand for dry wood permits is still great, showing that this opportunity of securing fuel at a merely nominal price is much appreciated; 65 dry wood permits were issued to the settlers in the surrounding country.

## VISITORS.

There were approximately 8,500 visitors to the park during the season, an increase over last year of more than 100 per cent.

Among these were Messrs. G. S. Yard and V. Baillie of the Parks Department, Department of the Interior, Washington, D.C., who had in view the development of a road to Agassiz and Kintla glaciers, in United States Glacier park. The only feasible route to these glaciers is through Waterton Lakes park.

## APPENDIX No. 7.

## BUFFALO PARK.

SUPERINTENDENT, A. G. SMITH, WAINWRIGHT, ALBERTA.

In addition to caring for the buffalo, Buffalo park also carries on a farm which produces the winter feed of the buffalo and sufficient oats to supply not only the requirements of the park but several of the other parks as well.

## FARMING OPERATIONS.

Some 400 acres were seeded to oats, part of which had been summer-fallowed. The dry season however proved too much for the light land, and the result was the yield was not quite twenty bushels per acre. In addition to producing the oats required for the park until the next crop and the seed for next year, it was possible to ship over 2,100 bushels to the other Dominion parks.

At the farm about 200 acres of the land under cultivation were summer-fallowed, this being the usual amount of land so treated each year.

The small acreage usually under crop at the Home Paddock was also put in summer-fallow, as two crops had been taken off and it was not thought advisable to do more with such light land.

## HAYING.

While the dry season was unfavourable for growing oats, it helped in the haying operations.

Some 1,200 tons of hay were cut and stacked, all of which was hauled during the winter, and most of it stacked in the hay corral adjoining the feed grounds in the winter quarters, to be carried over summer.



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In addition to the hay cut for the use of the park, the department has endeavoured to help production by granting hay permits to settlers living in the vicinity. Hay permits covering the cutting of 671 tons on the Buffalo park reserve were granted to settlers during the year.

## FIRE-GUARDING.

All the fire-guards around and across the park were ploughed.

There were two small fires in the park, caused by lightning. There were also a number of fires close to the park boundary, some started by the sparks of a railway engine and others by settlers clearing land; in every instance men were sent to help put them out.

To enable the riders to see the fence and also for fire protection purposes, considerable brush was cut out between the fire-guards along the main fence.

Fifteen miles of new fence were erected around the cattalo enclosure and about twenty-one miles of the main fence were repaired before the frost came.

## TIMBER PERMITS.

About 1,000 cords of dry wood were taken out of the park, under permit, by nearby settlers.

Some cleaning up was done on the lots recently surveyed on the shores of Mott lake. This expenditure was very necessary before any use could be made of this beautiful resort.

## WILD ANIMALS.

During the year there was an increase of 537 buffalo, and only 14 of a decrease; of this number 9 died, 4 were shot on account of being crippled, and 1 shipped to Brandon.

The elk show an increase of 14 and there has been no decrease.

The deer and moose also show an increase.

The following is the number of animals now in this park:—

|                            |       |                    |    |
|----------------------------|-------|--------------------|----|
| Buffalo.. . . . .          | 2,920 | Moose.. . . . .    | 18 |
| Elk.. . . . .              | 84    | Antelope.. . . . . | 3  |
| Deer (estimated).. . . . . | 397   | Cattalo.. . . . .  | 19 |

As there was plenty of feed in the large park, the greater part of the buffalo herd was left out to rustle during the winter months and they have come through the winter apparently in as good condition as when fed in winter quarters. Whenever possible, during the fall and winter, the cows with calves by their side and yearlings were cut out of the main herd and placed in winter quarters where they have been fed daily.

## COYOTES.

During the year a special effort was made to lessen the number of coyotes in the park which had become a serious nuisance. As other methods had met with indifferent success, it was decided to try the experiment of hunting them with dogs. Some Great Danes owned in the neighbourhood were secured and during the winter a steady hunt was kept up. The results were so satisfactory that the same method will probably be followed next year and it is hoped that eventually we shall be able to rid the park almost entirely of these pests.

## VISITORS.

This has been a record year for visitors, due no doubt to motor cars being allowed to enter the park. At the home paddock entrance the records show 4,238 visitors. These were from every province in Canada, from Newfoundland and from 19 of the different states of the American Union. The records kept at the farm and at the Hardisty gate also show a great increase in visitors. The total for the year was nearly 5,000.



## APPENDIX No. 8.

## ELK ISLAND PARK.

SUPERINTENDENT, ARCHIBALD COXFORD.

The road to the main entrance was repaired this season and some minor repairs were made to the main fence.

The fire-guards were disked in October putting them in good condition for the fall and spring.

A supply of hay sufficient for winter feeding was obtained, chiefly from the vicinity of Goose Lake.

## ANIMALS.

The animals are in good condition and wintered well. There was an increase of twenty-seven buffalo during the year and no losses. The elk and moose are also doing well. The total estimate of animals in the park at present is as follows:—

|                   |     |                           |     |
|-------------------|-----|---------------------------|-----|
| Buffalo.. . . . . | 161 | Elk (estimated).. . . . . | 106 |
| Moose.. . . . .   | 52  | Deer.. . . . .            | 115 |

During the nine months of the year there were 1,710 visitors.

## APPENDIX No. 9.

## ST. LAWRENCE ISLAND PARKS.

These parks consist for the most part of islands which were purchased from the Department of Indian Affairs a number of years ago.

They are situated in the St. Lawrence river between Brockville and a few miles west of Gananoque and form a part of the beautiful Thousand Islands district.

Only such work as was necessary to preserve the present equipment and to make the parks available for the public was carried on during the year.

Negotiations are under way to secure Doran's island which is situated just opposite the town of Morrisburg. It is a beautiful island and contains approximately 20 acres.

## APPENDIX No. 10.

## FORT ANNE PARK.

A. L. FORTIER, *Honorary Superintendent.*

This park comprises the site of the old Fort Anne at Annapolis Royal, Nova Scotia. It is one of the historic parks and was created to preserve the original fort which played such an important part in the early history of Canada.

The work in this park comprised chiefly such improvements as were necessary to preserve the old fort buildings and equipment. An old cottage on the fort property at the park entrance was removed.

A new sundial was donated by Colonel Shannon in memory of his ancestor, George Vaughan, who was at the siege and taking of the old fort in 1710.

A start has been made in a collection for a park library and museum and temporary quarters have been provided for them.

There is a caretaker to look after the grounds and building and show visitors around the fort.







PART III.  
FORESTRY







# REPORT OF THE DIRECTOR OF FORESTRY.

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R. H. CAMPBELL.

This report covers the work of the Forestry Branch for the year 1917-18.

During the past year the controllable work of the branch has been kept within as small proportions as possible, consistent with reasonable protection for the forests under its charge. The season was a dangerous one in many parts, through part or the whole of the season, and taxed the vigilance of the staff. On the whole the results seem to show that where the staff is sufficiently organized and equipped the situation in regard to the control of fire has shown marked improvement.

That the expenditure on forestry work in Canada is being kept at a modest figure is shown by a comparison with other countries. The average expenditure on the forest reserves under Dominion jurisdiction in Canada is one and three-quarters cents per acre; while in the United States it is three cents; in India, nine cents; in Sweden, fourteen and a half cents; and in France, one dollar and four cents.

The authority for the control of fires has been very much improved by the amendments to the Forest Fire Acts of the provinces of Manitoba and Saskatchewan, passed last year, providing that during the danger season, from April 1 to November 15, no fires shall be set out for the clearing of lands without a permit from a fire ranger. A cordial co-operation between the Dominion and provincial authorities in a proper and wise enforcement of these acts should greatly decrease the fire losses. The benefit of the permit system has already been found and should increase as it becomes longer established and better known. It is understood that the province of Alberta is considering similar legislation at the present time, and if such legislation is adopted it will bring all the lands under federal administration under the same system in this respect, as the province of British Columbia has had this provision in its Fire Act for some years.

The situation in the British Isles created by the war has drawn special attention to the necessity for wood supplies both for the present war and to assure the position of the country in the future, whether in war or peace, and a sub-committee, on forestry of the Imperial Reconstruction Committee was appointed to consider and report upon the question. This sub-committee has recently presented its report and in it gives consideration to the sources of timber supply, particularly those within the Empire, and urges the imperial importance of the forests of Canada as the main source of supply of coniferous timber within the Empire and the necessity for taking adequate steps for their protection and development. The findings of this report in its relation to Canada are of so much importance and come with such authority that it seems only right to call attention to them in this report in the exact words:—

“There remains a further question. The United Kingdom derives more than half its imported timber from virgin forests in foreign countries which are steadily being depleted. Canada contains the only large reserves within the Empire. Unless arrangements can be made with the Dominion Government for the effectual conservation of these reserves, it is inevitable that provision should be made within the British Isles on a far larger scale than is here proposed for purposes of defence. We consider that this question should be taken up at once with the Dominion Government.



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"The United Kingdom is dependent for more than 60 per cent of its timber on the virgin forests of foreign countries, which are being steadily depleted. The proportion derived from sources within the Empire fell from 22 per cent in 1899 to 10 per cent in 1913. Every year we become more dependent on Russia, which, in 1913, supplied us with nearly half our total imports. We have no means of reckoning how long the virgin forests will last, but unless they are brought under systematic management their exhaustion can only be a question of time. The arguments advanced on this subject by competent students have been supported since 1895 by a steady rise in price. The only large reserves within the British Empire are those in Canada which are rapidly being depleted by fire. The Dominion Government has initiated measures for their protection, but the problem is both large and difficult. It is one in which the United Kingdom has a deep interest since the Canadian reserves are the only source on which the United Kingdom can fall back if supplies from Russia fail. The arrangement prevailing before the war under which the exports from the Canadian forests were absorbed by the United States, while the United Kingdom drew its supplies from Russia, no doubt found much justification in economy of transport, but, unless the Canadian forests can be adequately protected and made available in case of necessity for the United Kingdom, it is certain that the area of timber within the British Isles must be increased far beyond that recommended in the proposals made in the following pages. We commend this Imperial question to the attention of the conference meeting in London. It is urgent because preparations made now cannot mature for many years and unless provision is made now either in Canada, Russia or the British Isles, it is practically certain that the United Kingdom will find timber difficult to procure in sufficient quantities before such preparations can mature."

In view of this report and recommendation it may be stated that as far as Canada is concerned, viewing the matter from the forest side first, what should be accomplished may be summarized under the headings:—

- (1) Protection, especially from fire;
- (2) Management on proper silvicultural principles;
- (3) Replanting;
- (4) Forest study and experiment.

Protection has been undertaken in some form by all responsible government agencies in Canada. On none of the territories, however, federal or provincial, are the organization and equipment adequate and efficient for the extent of the work required, partly on account of lack of funds, partly on account of lack of interest resulting from an inadequate understanding of the value of the forests and the danger of the present situation. Considerable has been accomplished but better organization and more adequate provision therefor are required.

The methods of timber operation followed in Canada result in a steady deterioration of the forest stand and condition instead of an improvement in condition and increase in quantity which would result from proper management. Little has been done to improve this condition. Probably more has been done by the federal forest service than by the provincial services, but only on a small proportion of the timber areas operated. Replanting of forest areas is being carried out on a small scale by the Dominion and also by the provinces of Quebec and Ontario, but not to such an extent as will have an appreciable effect on the timber supply.

Forest study and experiment have been only of a desultory character, and incidental to administrative work. At the forest nursery stations of the federal Government and of the provinces of Quebec and Ontario experimental plantations are being studied. The Council for Scientific and Industrial Research of the Dominion Govern-



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ment is providing for the establishment of a forest experiment station in Ontario, plans for which are now being made. An advisory committee has been organized by the federal forest service of foresters in the Government services, federal and provincial, in the forest schools, and in the employ of private firms, to consider and suggest plans for forest investigations in Canada, but effective action by this committee awaits the development of the necessary research staff in the federal forest service to give effect to the committee's recommendations.

Viewing the matter from the political side it should be kept clearly in mind that the jurisdiction over the forests of Canada is divided among the various provinces and the federal authorities, and by far the most valuable forests both in extent and quality and as a source of material for export are under the control of the provincial authorities. Concerted action should, however, be possible without interfering with the jurisdiction of the individual governing authorities, and it would be desirable to have formal action taken to bring this about. A formal recognition by the provincial authorities of the advisory committee organized in connection with the Forestry Branch of the Department of the Interior, and the further development of its functions as might be approved, might be a first constructive step in this direction. It might be possible and advisable for such a committee to co-operate or consult with the Imperial Forestry Committee if its functions are continued.

The Federal Government of the United States has developed two methods of co-operation with the state authorities by which the Federal Government assists the states, as follows:—

Under what is commonly known as the Weeks Law, passed in 1909, \$200,000 is appropriated from the National Treasury from which payment may be made to aid in forest protection on the watersheds of navigable streams in any state on lines satisfactory to the federal authorities.

The same Act provided for an appropriation of \$1,000,000, and for each fiscal year thereafter a sum not exceeding \$2,000,000, for use in the examination, survey, and acquirement of lands located on the headwaters of navigable streams. This was intended to apply to lands in states where the state was not financially able to undertake the work. With the consent of the states interested considerable areas on the Appalachian mountains have been acquired under this Act and it is frequently referred to as the Appalachian Law.

The necessity for research work in forestry is being felt more and more, both from the point of view of production and utilization. There is an intimate relation between the two as the possibility of profitable utilization of the products of the forest has a direct bearing on the methods it is possible to adopt to promote better production. Problems of utilization are being worked out by the Forest Products Laboratories, though much more extensive facilities than have yet been furnished for such inquiries are required. With the control of the fire danger becoming effective to a large degree on the more intensively administered forest reserves it is possible to make advances in forest development and management, and special investigations through a series of years are required to determine how far the theoretical principles worked out in other countries can be applied to Canadian conditions if we are to be certain that the plans that are followed are the proper ones and will bring the desired results.

The forest nursery station at Indian Head has been used as an experiment station in planting, various mixtures being used in the sample plantations. Careful measurements and records of the results have been kept and much valuable information has been gathered which will be of great value in developing the replanting work now being done on the forest reserves. In addition to experimentation with Canadian species a number of introduced species from temperate or northern climates have been used, such as Scotch pine (*Pinus silvestris*), cembra pine (*Pinus cembra*), larch (*Larix europea*), and spruce (*Picea excelsa*), from Europe, and Himalaya pine



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(*Pinus excelsa*), Japanese larch (*Larix leptolepis*), and spruce (*Picea ajanensis*) from Asia. Of these species Scotch pine has shown the greatest adaptability to Canadian conditions and has made satisfactory development in every respect.

The Honorary Council for Scientific and Industrial Research, in laying out the programme of research work that required development in Canada, included forest research as one demanding immediate attention and recommended an appropriation of \$6,000 for making a beginning in such work, and the amount necessary was provided. The council asked this Branch to undertake the work that was to be done, and on consultation with the council it was decided that the establishment of a forest experiment station was advisable and that the tract in the vicinity of Petawawa, placed at the disposal of the Department of the Interior for the purpose by the Department of Militia and Defence should be devoted to this purpose, and that the forest survey to obtain the necessary information in regard to the nature and condition of the tract should be begun and the expenditure provided from the special appropriation. The location of this tract is in the pine district of Ontario and a large portion of the tract was at one time included in timber berths and cut over for pine, so that it gives a good location for the study of the development of this important Canadian species.

The planting of the forest lands has been continued this year on a small scale, plantations aggregating 102 acres having been made on the forest reserves in the prairie districts in Manitoba and Saskatchewan.

The placing of appointments in the outside service of the department under the Civil Service Commission has improved very much the possibility of obtaining properly qualified men for the positions required to be filled, and should in time improve materially the calibre of the force. There is, however, a lack of opportunity for men to obtain proper training for the work of forest ranger previous to appointment, as the forest schools so far established in Canada provide only for the higher technical training. As it is considered desirable that returned soldiers should be given the first opportunity for obtaining employment in the forest service and gaining the necessary qualifications for appointment, arrangements have been made by the Military Hospitals Commission for a forest ranger course for returned soldiers to be given at Vancouver, in which co-operation is being given by the staff of this branch as well as the forest service of the province of British Columbia. The main divisions embraced in the course are (1) elementary surveying, (2) forest management, and (3) forest protection, and these will be covered by lectures and field demonstrations. The instruction will be given by foresters, including two of the inspectors of this branch.

The shortage of coal during the past winter called special attention to the necessity of utilizing as far as possible other sources of fuel supply, including wood. Large quantities of wood are used each year for fuel in Canada. The forest reserve regulations have provided for simple methods of obtaining fuel-wood from the forests, and large quantities have been taken out every year and the quantity markedly increased during the last winter. The regulations were framed, largely, keeping the requirements of the individual settler in view, but with the more active demand for fuel-wood, coupled with the fact that there are on many of the forest reserves extensive burned areas which are not readily accessible, amendments have been made to the forest regulations that will facilitate the taking out of wood from such areas for use in the cities and towns. It was arranged also to co-operate with the provincial authorities in any organization they might form for assisting in the distribution of fuel throughout the western provinces.

In furtherance of the programme of forest development in the British Isles a request was made by the home grown timber committee for seed of a number of species of Canadian trees, mainly species native to the Pacific coast in the province of British Columbia, to be used for reforestation. Considerable time was given during last summer and fall to obtaining the seed required and seed of most of the species needed was secured. Unfortunately, owing to insects attacking the cones no supply of reliable



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seed of the two species specially desired, Douglas fir and Sitka spruce, could be obtained.

Another interesting request was received from the Government of New South Wales, which asked the Canadian Government to undertake an investigation of the suitability of certain woods from that state for the making of pulp and paper. This department expressed its willingness to undertake the carrying out of the necessary investigations at the Forest Products Laboratories of this branch, and the Government of New South Wales were advised of the quantity and type of material that would be required for the purpose.

## THE WHITE PINE BLISTER RUST.

A great deal of anxiety has been caused by the discovery of the white pine blister rust in Canada, a fungous disease which seriously threatened the growing of white pine in this country. The disease is of the same family as the rust on wheat, and similar in many respects, particularly in having two host plants. In this case currant bushes, particularly black currants, are the hosts in the first stage of the development of the fungus and the white pine in another stage. The effects of the disease are to destroy the young pine. The disease was first observed in Canada in the year 1914 and steps have since been taken to ascertain more in regard to its life history and its spread in Canada. As a result of these investigations undertaken by the Bureau of Pathology of the Department of Agriculture and also by the provinces of Ontario and Quebec, it was found that the disease was widely spread in southern Ontario and had appeared at some points in Quebec.

An international forest conference was called in Washington early in 1917 to consider particularly the danger to the white pine of the United States and Canada on account of the introduction of this rust, and at the close of that season another conference was held in Pittsburg. The conclusions at this conference were that the disease had evidently been present in the United States for some years without having been noticed, that its spread was probably comparatively slow, and that it was found only in the eastern part of the United States and had not yet spread to any of the western white pines. Proposals were made to control the distribution of currant and white pine stock so as to localize the disease, particularly to prevent the distribution of such nursery stock in the western part of the country, where the disease had not yet appeared; to continue the study of the disease; to undertake eradication work only in places where the infected tracts were isolated and there was prospect of reasonable success. It was felt that the complete eradication of the disease was now an impossibility.

In consequence of this situation the matter was considered by representatives of the Canadian Department of Agriculture and Department of the Interior, the Commission of Conservation, the provincial governments, and the Canadian Lumbermen's Association, and it was decided to recommend to the Dominion Government that a committee representing the various interests involved should be appointed to investigate the whole question and that a special appropriation of \$25,000 should be provided to deal with the matter. This committee representing the Dominion Government, the provincial governments interested, the Canadian Lumbermen's Association, and the Canadian Nurserymen's Association, met and considered the whole question and it was decided to make the following recommendations in regard to the action to be taken:—

*British Columbia.*—The shipping of white pine, currants, and gooseberries into this province to be prohibited.

*Manitoba, Saskatchewan, and Alberta.*—No prohibition at present but the matter to be reconsidered next fall.

*Ontario.*—Shipment of white pine and black currants to be prohibited north of the line of the Parry Sound branch of the Grand Trunk railway, formerly the Canada Atlantic railway.



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*Quebec.*—The shipment of white pine and black currants to be prohibited north of the St. Lawrence river and west of Quebec City except on the island of Montreal.

*New Brunswick and Nova Scotia.*—No prohibition.

It was decided that the investigation of the history of the disease, which was carried on by the Bureau of Plant Pathology, should be continued, and that sample areas should be selected in the provinces of Ontario and Quebec, at several different places, so that the action of the disease could be further studied. Two plots were to be established in the western part of Ontario, two in the Ottawa valley, and two in the province of Quebec.

It was also decided that it would be desirable that inspection for the discovery of any cases of the disease should be begun in the provinces of British Columbia, Alberta, Saskatchewan and Manitoba, particularly at points where it was known that shipments of currants were sent out last year or the present year; that inspection should be carried on in the northern part of Ontario, in the part of Quebec north of the St. Lawrence and along the international boundary, and in the province of New Brunswick.

The work will be carried on under the direction of the Bureau of Plant Pathology of the Department of Agriculture under the general supervision of the committee.

## STAFF

The total permanent staff of the branch for last year was as follows:—

|   |                 |
|---|-----------------|
| Head office.. . . .                                 | 36              |
| District inspectors.. . . .                         | 5               |
| Assistant inspectors and forest supervisors.. . . . | 17              |
| Forest assistants.. . . .                           | 6               |
| Forest rangers.. . . .                              | 89              |
| Chief fire rangers.. . . .                          | 9               |
| Inspectors of tree planting.. . . .                 | 9               |
| Forest Products Laboratories, technical.. . . .     | 15              |
| Outside clerical staff.. . . .                      | 34              |
| On military leave.. . . .                           | 43              |
| Total.. . . .                                       | <hr/> 263 <hr/> |

The total number of men who have enlisted is 72.

Word has just been received that Lieut. D. A. MacDonald, of the Royal Flying Corps, who was for a time reported "missing," has been taken prisoner and is in Germany. Mr. MacDonald was forest assistant on the Bow River division of the Rocky Mountains forest reserve.

## APPROPRIATION

The appropriation for the year was \$650,000. The expenditure was divided as follows:—

|   |                          |
|---|--------------------------|
| Salaries at head office.. . . .                 | \$ 12,671 01             |
| Salaries of officials on military leave.. . . . | 15,835 44                |
| Travelling expenses.. . . .                     | 1,485 90                 |
| Printing and stationery.. . . .                 | 11,268 08                |
| Miscellaneous expenses, head office.. . . .     | 726 62                   |
| Statistics.. . . .                              | 2,020 75                 |
| Fire-ranging.. . . .                            | 190,469 15               |
| Forest reserves.. . . .                         | 304,168 55               |
| Tree planting.. . . .                           | 57,100 69                |
| Forest Products, Laboratories .. . . .          | 56,548 21                |
| War appropriation.. . . .                       | 9,755 82                 |
| Total.. . . .                                   | <hr/> \$662,050 22 <hr/> |

NOTE: The item of \$9,755.82 shown under "War Appropriation" was drawn from the Forestry appropriation and later refunded, and the remainder of the over-expenditure was covered by refunds by holders of timber licenses of amounts expended on protection of their limits.



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The field expenditure, exclusive of tree planting on the prairie farms, is divided as follows among the provinces:—

|   |                          |
|---|--------------------------|
| Manitoba.. . . . .                        | \$ 85,445 93             |
| Saskatchewan.. . . . .                    | 137,457 54               |
| Alberta.. . . . .                         | 177,548 50               |
| British Columbia (Railway Belt).. . . . . | 94,185 73                |
| Total.. . . . .                           | <hr/> \$494,637 70 <hr/> |

## LIBRARY

The awakening recognition of the importance of research work in all lines of activity has given additional importance to the library of the branch. Room for research work in forestry is very large and the work of research naturally begins in the library by way of investigation of work already accomplished along the projected lines. Hence the necessity of having on hand the records of all work accomplished throughout the world up to the latest possible time.

During the year about four hundred books and pamphlets were added to the library and, as usual, were carefully indexed as were also the extracts from the technical publications received. The number of new photographs added to the collection of forestry pictures was considerably smaller than in past years, owing to the fact that forest survey work was so greatly reduced. Sets of lantern slides for the various district inspectors' offices were completed and a lecture was also prepared to accompany them. Each of the district offices now has a set of slides which it is hoped may be of considerable assistance in extending information on forestry and the aims and methods of forest administration.

## PUBLICATIONS

The endeavour in preparing the publications of the branch has been to secure the greatest amount of efficient publicity at the lowest cost. To this end all publications are carefully edited to see that all material admitted is the most suitable for the purpose. The steady demand for these bulletins proves that Canadian producers, exporters, and transportation companies find them of value in their work. A good deal of attention has been devoted to supplying information to Canadian newspapers, which are always alert in giving warning against forest fires and in assisting in the protection of the great natural resource represented by our forest. The experiments made in new forms of posters, warning all woodsmen against the careless use of fire, have resulted in bringing out some very effective posters which are weatherproof and portable. The search for the ideal poster is being continued. During the year the following publications in pamphlet form were issued:—

- Bulletin No. 58. Forest Products of Canada, 1915 (French edition).
  - “ 60. Canadian Douglas Fir: Its Mechanical and Physical Properties.
  - “ 61. Native Trees of Canada.
  - “ 62a. Forest Products of Canada, 1916: Lumber, Lath and Shingles.
  - “ 62b. Forest Products of Canada, 1916: Pulpwood.
  - “ 62c. Forest Products of Canada, 1916: Poles and Cross-ties.
  - “ 62d. Forest Products of Canada, 1916: Directory of Saw-mills.
  - “ 62. Forest Products of Canada, 1916. (Being a combination of Bulletins 62a, 62b, 62c and 62d.)
- Pamphlet, “Advice to Settlers Regarding Handling of Fire.”

## STATISTICS

As the Bureau of Statistics of the Department of Trade and Commerce is taking a census of industries for the year 1917, which will include the figures of production, this branch has not undertaken the usual collection of the statistics of forest products except as regards poles and cross-ties which it was thought we could better handle for



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the year. No statistics of production for 1917 will therefore be issued by this branch and for subsequent years the collection and publication of the figures will probably be made by the Bureau of Statistics. This branch will however co-operate in the preparation of the forms and reports and in any other way possible and will carry out any special statistical studies that may be found necessary.

#### TREE PLANTING

The planting of trees on the farms in the prairie districts has become so thoroughly established and the results are so generally successful that there is little that it is necessary to remark specially. There have been, since the inauguration of the tree distribution, 45,357,146 trees distributed for planting on the farms, but that there is still a great field of development to be covered is indicated by the recent criticism of an eastern journalist, travelling by rail through the western prairies, that he could not see much evidence of where these trees were planted. All of these trees were planted on farms and 85 per cent or more of them are growing successfully, but there is room and necessity for as large a distribution for many years yet.

The number of trees distributed to farmers in 1917 was 8,400,000, the largest in the history of this work, and these were distributed to 4,561 applicants. Owing to poor seed conditions in 1916 and an unfavourable year in 1917 the supply available for distribution in 1918 is considerably smaller. The number of coniferous trees sent to farmers in 1917 was 158,616. The dry season was not favourable to the evergreens and they suffered considerably.

A supply of coniferous trees for planting on the forest reserves was also grown at Indian Head, and plantations were made on several small reserves in the prairie districts.

#### FIRES.

The season of 1917 was very dry in the southern part of the Prairie Provinces, especially in the spring and early summer, but in the northern portion the conditions of moisture were generally better, though similar conditions to those in the south seemed to prevail westward. In the Rocky mountains the spring was wet but was followed by a dry and dangerous time in July. In British Columbia there was considerable variation in the spring but the summer and fall were very dry and there were many fires, especially in the southern part of the province. On the whole the season was one that required great alertness, and that the fires were generally so well held gives some confidence that the protective organization is becoming increasingly effective and may soon be in a position to deal efficiently with any situation that may arise.

There have been serious losses during the season, however, especially of young trees. In one case some 14,000 acres, with considerable young growth scattered over it, was burned, as a result, solely, of the incompetence of the forest ranger, whose services have fortunately since been dispensed with. This illustrates how easily the work of a good protective organization may be nullified by the unsuitability of one man. In every other district in the reserve referred to the fires were prevented from entering, or were extinguished immediately. In another case some 20 acres on a forest reserve were planted with young trees and 2,000 acres of young growth were burned over, making a net loss in the young stand, for the year, of 1,980 acres. These fires could not be attributed to lack of watchfulness on the part of the rangers, but are indicative of a lack of proper public opinion and care, for which to some extent the rangers must be held responsible although the process of education of the public is a slow and difficult one and the view that the only permanent wealth of the country is agricultural is hard to eradicate.



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The total number of fires during the year was 1,085, as compared with 891 in 1916 and 1,706 in 1915. The number of these fires that burned over an area of ten acres or more, was 348, as compared with 146 in 1916, and 482 in 1915. The total area burned over was 616,682 acres, classified in part as 106,849 acres of merchantable timber, and 116,107 acres of young growth. The quantity burned was 34,373,000 feet board measure and 965,869 cords. The average area of the fires over ten acres was 1,770 acres.

The causes of fires are indicated in the table hereunder. The number of fires is shown for 1917 only, but the percentage due to each cause is shown for the last three years for the purpose of comparison.

|  | No. of<br>Fires. | Percentages. |       |       |
|--|------------------|--------------|-------|-------|
|  |                  | 1917.        | 1916. | 1915. |
| Unknown.. . . . .                          | 348              | 32           | 30    | 30    |
| Campers and travellers.. . . . .           | 199              | 18           | 20    | 33    |
| Settlers.. . . . .                         | 242              | 22           | 18    | 15    |
| Railways . . . . .                         | 183              | 17           | 20    | 13    |
| Lightning.. . . . .                        | 40               | 4            | 7     | 4     |
| Lumbering.. . . . .                        | 28               | 3            | 3     | 2     |
| Incendiary.. . . . .                       | 25               | 2            | 1     | 1     |
| Brush disposal (other than by settlers) .. | 12               | 1            | ...   | ...   |
| Other causes.. . . . .                     | 8                | 1            | 1     | 2     |
| Totals.. . . . .                           | 1,085            | 100          | 100   | 100   |

FIRES AND RAILWAYS.

The inspection of the patrols along the lines of railway was carried out by one permanent inspector and eight temporary inspectors. The patrols on the railways under the jurisdiction of the Dominion Board of Railway Commissioners were furnished by the railway companies, but on the railways owned by the Dominion Government the patrol was provided by this branch, there being eight patrolmen employed. On the whole the companies looked well after the clearing of the right of way, especially in view of labour conditions, and the patrols were well maintained. Some defects in these respects were called to the attention of the companies. The locomotives were inspected regularly and were generally found in good condition. Out of 281 inspections 29 locomotives were found defective. The number of fires on Dominion lands, attributable to railways, was 183, or 17 per cent of the total number.

It would be of considerable advantage if the railways through Dominion lands, which are constructed under provincial charters, were brought under regulations similar to those established by the Dominion Board of Railway Commissioners.

FOREST RESERVES.

The forest reserves include an area of 23,024,640 acres, and the permanent staff employed thereon is: District inspectors, 4; supervisors, 13; forest assistants, 5; forest rangers, 98; total, 120. The staff is smaller than is necessary for proper management, but under present conditions any increase in numbers can hardly be made. In fact it has somewhat decreased owing to the withdrawal of men required for the army, and resignations resulting from the offer of more remunerative positions in provincial forest services. The temporary staff of rangers on the reserves numbered 67.

*Improvements.*—The improvement work on the forest reserves was kept down to as low a point as possible, consistent with the need for protection and the proper utilization of the services of the staff during the periods when active patrol and fire-fighting were not required. The system of improvements has been planned carefully so as to be economically constructed and permanent. There yet remains a very large



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programme of improvements to be carried out in order to give proper protection to the forests in the reserves. Following is a statement of the improvements completed during the year, with the total and average cost, including the cost of labour by forest rangers:—

| Class of improvements—                                |         |     | Total.   | Average. |
|---|---------|-----|----------|----------|
| Cabins.. . . . .                                      | Number. | 13  | \$ 3,085 | \$ 237   |
| Houses.. . . . .                                      | "       | 6   | 8,024    | 1,337    |
| Stables.. . . . .                                     | "       | 9   | 1,932    | 215      |
| Lookout towers.. . . . .                              | "       | 3   | 455      | 152      |
| Other buildings.. . . . .                             | "       | 20  | 4,339    | 217      |
| Bridges.. . . . .                                     | "       | 2   | 2,681    | 1,340    |
| Telephone lines.. . . . .                             | Miles.  | 248 | 28,393   | 114      |
| Fireguards ploughed.. . . . .                         | "       | 104 | 766      | 7        |
| "    cleared .. . . . .                               | "       | 21  | 652      | 31       |
| Roads.. . . . .                                       | "       | 36  | 4,525    | 125      |
| Trails.. . . . .                                      | "       | 151 | 10,556   | 70       |
| Miscellaneous projects, such as fences, etc.. . . . . |         |     | 3,809    |          |
| Total.. . . . .                                       |         |     | \$69,217 |          |

*Timber operations.*—There has been a considerable increase in the timber operations on the forest reserves, partly due to the increased demand for lumber by the farmers and partly to the requirements for fuel which were not met by the coal supplies available. The regulations in regard to dead timber, of which unfortunately there are large areas on the reserves as a result of fires, were amended in view of these conditions so as to greatly facilitate the removal of such material. The number of permits issued was 3,613 and the quantity cut thereunder was 6,862,983 feet board measure, 38,669 cords, and 763,016 lineal feet. The number of free permits was 1,851. There were sixteen millsite locations for cutting under settlers' permits occupied on the reserves in the prairie districts. These have been a great convenience to the settlers, who could thus get their logs sawn conveniently in the forest and needed to haul out only the lumber. While the quantities cut under permit have largely increased the quantities reported under seizures are steadily decreasing, apparently indicating that the observance and enforcement of the regulations are steadily improving.

Operations were carried on during the past year on eighteen sales, four of which were made during the year. The cut of saw-timber on such sales was 4,149,125 feet board measure and that of mine props and lagging 1,720,107 lineal feet.

The operations are being conducted with much more care than in the past. The disposal of debris is more thorough and the protection of seed trees and young growth more carefully carried out. The prospects in this respect are very hopeful. Unfortunately, the good results obtained are nullified to a large extent by the slash left on neighbouring operations that are not properly supervised. This was specially demonstrated in the large fire that occurred in the Crowsnest valley.

*Fires.*—There were 159 fires on the forest reserves, as compared with 43 fires in 1916, and 205 fires in 1915. Eighty-three of these fires, 52 per cent, burned over more than ten acres each. The total area burned was 196,519 acres, of which 23,043 acres were covered with merchantable timber and 44,139 acres with young growth.



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A statement of the causes of fires on forest reserves in 1917 and a comparison by percentage with the three previous years is attached:—

| Causes.                                    | No. of Fires. | Percentage. |       |       |
|--|---------------|-------------|-------|-------|
|  |               | 1917.       | 1916. | 1915. |
| Unknown.....                               | 50            | 31          | 35    | 34    |
| Campers.....                               | 33            | 21          | 17    | 22    |
| Settlers.....                              | 29            | 18          | 14    | 24    |
| Railways.....                              | 22            | 14          | 17    | 9     |
| Lightning.....                             | 8             | 5           | 4     | 2     |
| Lumbering.....                             | 5             | 3           | 9     |       |
| Incendiary.....                            | 6             | 4           | 2     | 6     |
| Brush disposal (other than by settlers)... | 1             | 1           |       | 2     |
| Other causes.....                          | 5             | 3           | 2     | 1     |
| Total.....                                 | 159           | 100         | 100   | 100   |

*Forest Nurseries.*—Small nurseries for the supply of trees for reforestation have been started on several of the reserves in the prairie districts. These reserves are the Pines and Moose Mountain in Saskatchewan, the Spruce Woods in Manitoba, and the Cypress Hills in Alberta. These nurseries are not intended to supply more than the local necessities and at present consist of only a few beds of seedlings which can be looked after without a special organization for the purpose. A large part of the stock for replanting has been furnished from the forest nursery station at Indian Head. It will probably be necessary, as soon as it can be undertaken, to provide for an extension of the nurseries on the forest reserves, if the restocking of them is to be accomplished.

The plantations set out during the year aggregated about 100 acres, the trees being placed generally about four feet apart each way. The species used were spruce, jack pine, and Scotch pine. The season was dry and windy and therefore unfavourable to success, and there was a considerable loss of stock in the plantations. Arrangements have been made for stock to fill up the places where the seedlings died.

*Grazing.*—The number of permits for grazing stock during the year was 516, and the total number of stock grazed was 27,891, of which 18,774 were cattle, 2,498 horses, and 6,600 sheep. The number of stock grazing on the reserves is considerably larger than the figures show, as there are large numbers grazing on the forest reserves in British Columbia on which the grazing regulations are not put into force and in regard to the stock on which there is, therefore, no record. The number reported shows a considerable increase over the previous year.

The grazing on the small reserves scattered throughout the prairie country has been a great advantage to the farmers living in the vicinity and has assisted materially in the development of the stock industry in the districts in which they are located. Considerable further development may yet be made.

During the year 6,600 sheep were grazed on the forest reserves, mainly in the Livingstone valley in southern Alberta. The conditions for sheep grazing in this valley are very satisfactory and the stock were taken off the range in good condition. The chief difficulty in the development of sheep grazing is the lack of facilities for getting the sheep from their winter grazing grounds to the range in the mountains. Driving or rail haul for long distances is necessary and adds to the cost, while it may affect more or less the condition of the stock.

The extent to which the grazing on the reserves is being used and the increasing demands for it make necessary at the earliest possible time a careful study of the range and its possibilities of development, but that cannot be undertaken under present staff conditions.



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*Fish.*—The fishing resources of the forest reserves are contained for the most part in relatively small bodies of water which will not admit of net fishing to any considerable extent. The exception to this is found in the northern reserves, some of which contain fairly large lakes, in which net fishing has been carried on for years past. Provision has been made for a continuance of net fishing in these more remote northern reserves, but it has been considered that in the small reserves lying closer to settlement a policy which provided for angling and trolling alone would be the only policy that would insure a continuous and increasing supply of good food and provide good recreation. During the year demands were made in some of the newspapers that netting be allowed in these small reserves so as to relieve the local food situation, and in one case a request was made that the fishing season be extended. Careful enquiry was made in these cases and it was found that in no instance could the demands be acceded to without impairing the future productivity of these waters. Further, it was found that in no case was the food situation so serious as to warrant the adoption of the rather drastic measures proposed.

The forest rangers have been active in their efforts to prevent illegal fishing, and all prohibited fishing appliances have been confiscated wherever discovered.

While fishing without a permit by resident British subjects is allowed in those waters which are not frequented by trout, grayling or Rocky Mountain whitefish, permits are required to fish in trout waters and a large number of such permits have been issued during the year.

The policy of regulated fishing is already having noticeable results in some of the forest reserves in the increasing number of fish taken, and it may reasonably be expected that a continuation of this policy will improve the fishing on all of the reserves.

*Game.*—Reference has been made in previous reports to the Stony Indians, a number of whom have located on the Kootenay plains on the North Saskatchewan river, in the Clearwater division of the Rocky Mountains forest reserve. The location is not suitable for agriculture and would not yield the Indians a living without recourse to hunting. As these Indians are persistent and skilful hunters their activities have resulted in a serious decrease in the game of that region, and complete extermination of the game is inevitable unless these Indians return to their reserve. It is satisfactory to note that at the last session of Parliament an appropriation was made to cover the cost of the removal of these Indians, and an effort will shortly be made by this department and the Department of Indian Affairs to have them transferred to the Stony Indian reserve.

The half-breeds at Grande Cache, in the Athabaska division of the Rocky Mountains forest reserve, have also proven themselves the most destructive enemies of the game in the country surrounding their location. The report of a party which recently travelled through this vicinity in the interests of the Smithsonian Institute, stated that one of the greatest curses of the north country game is the half-breeds who recognize no game laws and have practically exterminated big-horn sheep.

In addition to their destructive inroads on the game these half-breeds refuse to conform to the grazing regulations, and, as it is found impossible to compel the white people to recognize the regulations while the half-breeds are allowed to ignore them, the grazing regulations are practically suspended in so far as the Athabaska forest is concerned. It has long been recognized that the only effective remedy is the removal of the half-breeds to another location, but as this action was opposed by the provincial authorities, measures which had been adopted to secure their removal from the reserve were dropped. It is hoped, however, that as the situation develops some way will be found of dealing with the matter.

The forest rangers have continued to co-operate with the provincial authorities in the protection of game on the areas in forest reserves which have been proclaimed.



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game preserves, and have assisted in seeing that the hunting laws were observed on the areas where hunting in season is permitted. A few prosecutions were made for illegal hunting.

The Alberta government proclaimed a close season from November 1, to December 31, 1917, on all game in that portion of the Cypress Hills forest reserve which lies in Alberta. This is the first instance where the Alberta government has passed prohibitory regulations in regard to game on forest reserves, but there is no reason why game preserves may not be proclaimed by the province in forest reserves where conditions make such action advisable. Previously, hunting has been prohibited by the province in Dominion parks only.

## FIRE-RANGING OUTSIDE FOREST RESERVES.

The forested areas, outside of the lands examined and included in forest reserves, are patrolled by temporary fire rangers under the supervision of chief fire rangers, who are generally permanent officers. The extent of territory to be covered, approximately 132,000,000 acres in the provinces of Manitoba, Saskatchewan, and Alberta, and 6,000,000 acres in British Columbia, makes it necessary to have large patrol districts, there being 126 in the former, averaging 1,047,000 acres, and 58 in the latter, averaging 107,000 acres. In the more northern districts, where patrol is made by canoes, the rangers generally have a canoeman to assist.

While there is not much money available for improvements in these districts the rangers have done considerable in clearing trails and canoe routes, erecting cabins and lookout towers to facilitate the protection of their districts. The rangers are fighting against heavy odds but on the whole they have taken hold of the work actively and are securing some success and a measure of popular support. Some rangers, unfortunately, were not well fitted for the work and have weakened the organization at important points.

The number of chief fire rangers employed was 11, and of fire rangers and assistant rangers 226. The number of fires was 926, as compared with 848 in 1916 and 1,501 in 1915. The total area burned over was 420,163 acres, of which 83,806 acres carried 25,619,000 feet board measure of timber and 849,771 cords of wood; and 71,968 acres were covered with young growth.

The causes of the fires outside the forest reserves were as follows:—

| Causes.                                      | No. of Fires. | Percentages. |       |       |
|--|---------------|--------------|-------|-------|
|  |               | 1917.        | 1916. | 1915. |
| Unknown.....                                 | 298           | 32           | 30    | 31    |
| Campers.....                                 | 166           | 18           | 20    | 34    |
| Settlers.....                                | 213           | 23           | 19    | 13    |
| Railways.....                                | 161           | 17           | 20    | 14    |
| Lightning.....                               | 32            | 4            | 7     | 4     |
| Lumbering.....                               | 23            | 3            | 3     | 2     |
| Incendiary.....                              | 19            | 2            | *     | .     |
| Brush disposal (other than by settlers)..... | 11            | 1            | ^     | .     |
| Other causes.....                            | 3             | *            | 1     | 2     |
| Total.....                                   | 926           | 100          | 100   | 100   |

\*Less than one-half of 1 per cent.



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## FOREST SURVEYS.

The only survey carried out during the year was that on the military reservation at Petawawa. Owing to the late date at which the appropriation for the survey became available, and to difficulties in getting a party organized, the survey did not begin until August 1. As a consequence the survey was completed on only about one-third of the tract but, with a full season's work during the coming year, it is hoped to have the whole area covered.

The soil over the portion examined is generally light, becoming pure sand in some locations, and in some parts there is a rocky subsoil. There are also considerable areas of muskeg. The types of forest cover vary considerably but a great part of the reserve is covered with an even-aged growth of from 40 to 60 years of age. This is not a virgin stand, being largely natural reproduction following extensive logging operations of 30 to 50 years ago. There is little mature timber and few pure stands and the reproduction has a rather large predominance of hardwood species. Ash, elm, oak, maple, birch, and other hardwoods occur, and white and red pine, jack pine, and spruce among the conifers. There are some pure stands of pine of the different species occurring over small areas. The forest cover as a whole is very typical of the vast areas of cut-over lands now existing in the provinces of Ontario and Quebec; hence the district, presents an admirable area whereon experiments may be made and theories tested and worked out to conclusions which may solve the problem of the best methods of utilization of such lands which are now over large areas producing little or nothing of value.

## FOREST PRODUCTS LABORATORIES.

The Forest Products Laboratories have suffered severely by reduction of staff. A considerable number enlisted in the army early in the war, but latterly the demand for technical men has become so great that a large part of the remaining staff has been drawn into work for private firms in positions more remunerative than those offered in the Government service. This situation raises a serious question as to the future status of the work of scientific research, so important for the development of the industries of the country and the proper utilization of its resources. The pulp and paper division being one of those that have suffered most severely on account of the loss of men, the advisory committee appointed by the technical section of the Canadian Pulp and Paper Association, realizing the seriousness of the situation, have taken up with the firms engaged in the industry a proposition for financial assistance to this division of the laboratories, at least for the war period, so that it can be properly manned and the work carried on efficiently. It is expected that such a formal proposition will shortly be made. This will involve a scheme of co-operation in the conduct of the laboratories on the lines which seem to be favoured by the Imperial Research Department and by the Canadian Honorary Council for Scientific and Industrial Research.

The main projects under way have been continued. The compilation of the literature from all languages on waste sulphite liquor has been completed and the material submitted for publication. This will be a very valuable reference work on the subject and may lead toward the utilization of material which not only is now waste but is actually injurious in streams into which it is turned. The manufacture of alcohol for war purposes from such waste liquor has been discussed with several pulp and paper firms and it is possible that arrangements may be made for starting such manufacture. The investigation of the chemistry of pulpwoods is proceeding and much valuable information has been obtained that will give direction for the best methods of chemical treatment of such woods. In wood preservation a simple and satisfactory method for the impregnation of hemlock and jack pine, woods not of long life and now used so largely for railway ties in Canada, has been worked out. Generally progress has been made and good work done so far as equipment in men and machinery would permit.



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The completion of sets of specimens of Canadian woods made it possible to furnish such sets to a number of educational institutions, particularly technical schools.

A request was made by the Imperial Munitions Board for co-operation in the testing of timbers at Vancouver for aeroplane construction, and after discussion of the whole situation, and in view also of the possibility of the establishment of a permanent testing station and forest laboratory at Vancouver, an arrangement was reached and has been approved that a plan of co-operation for the testing work required should be carried out between the Imperial Munitions Board, the University of British Columbia, and the Department of the Interior. Under this arrangement the university will provide the necessary accommodation and the Imperial Munitions Board will furnish the necessary staff except the superintendent and this department will provide the superintendent and will also furnish the equipment.



STATEMENT of Revenue, Forestry Branch, Fiscal Year, 1917-18.

| Reserve.                  | Timber Sales. |      | Timber Permit Fees and Dues. |       | Timber Seizures. |      | Grazing Fees and Trespass Dues. |      | Hay Permit Fees and Seizures. |      | Surface Rental. |      | Special Uses. |      | Nursery Stock. |      | Unclassified. |      | Total.    |      |
|---------------------------|---------------|------|------------------------------|-------|------------------|------|---------------------------------|------|-------------------------------|------|-----------------|------|---------------|------|----------------|------|---------------|------|-----------|------|
|                           | \$            | cts. | \$                           | cts.  | \$               | cts. | \$                              | cts. | \$                            | cts. | \$              | cts. | \$            | cts. | \$             | cts. | \$            | cts. | \$        | cts. |
| Turtle Mountain.          |               |      |                              | 69 45 |                  |      | 1,254 25                        |      | 139 95                        |      | 85 00           |      |               | 0 25 |                |      | 76 00         |      | 1,624 90  |      |
| Spruce Woods.             |               |      |                              | 25 50 |                  |      | 441 75                          |      | 61 85                         |      |                 |      |               |      |                |      |               |      | 529 10    |      |
| Riding Mountain           | 278 25        |      | 10,764 67                    |       | 707 37           |      | 319 25                          |      | 506 60                        |      | 11 60           |      | 605 75        |      |                |      | 5 00          |      | 13,198 49 |      |
| Duck Mountain...          |               |      | 3,266 70                     |       | 275 36           |      | 117 50                          |      | 195 20                        |      | 135 00          |      | 3 50          |      |                |      | 0 25          |      | 3,993 51  |      |
| Moose Mountain..          |               |      | 344 50                       |       | 69 70            |      | 155 75                          |      | 300 55                        |      | 65 00           |      | 1 50          |      |                |      |               |      | 937 00    |      |
| Beaver Hills.....         |               |      | 243 90                       |       |                  |      | 110 85                          |      | 195 30                        |      |                 |      | 3 00          |      |                |      |               |      | 553 05    |      |
| Porcupine.....            | 509 24        |      | 897 53                       |       | 59 20            |      | 51 50                           |      | 178 00                        |      |                 |      | 79 50         |      |                |      |               |      | 1,774 97  |      |
| Pasquia.....              | 1,976 98      |      | 2,239 02                     |       | 124 10           |      | 8 30                            |      | 16 40                         |      |                 |      | 3 25          |      |                |      |               |      | 4,368 05  |      |
| Fort à la Corne....       | 185 14        |      | 392 14                       |       | 21 50            |      |                                 |      |                               |      |                 |      | 50 00         |      |                |      |               |      | 648 78    |      |
| Pines.....                |               |      | 414 80                       |       |                  |      | 58 70                           |      | 93 40                         |      |                 |      | 2 00          |      |                |      |               |      | 568 90    |      |
| Nisbet.....               |               |      | 481 56                       |       | 76 00            |      | 25 20                           |      | 27 05                         |      |                 |      | 0 75          |      |                |      |               |      | 610 56    |      |
| Big River.....            | 975 64        |      | 3 25                         |       | 175 00           |      | 38 85                           |      | 42 50                         |      |                 |      | 1 75          |      |                |      |               |      | 1,236 99  |      |
| Steep Creek.....          |               |      | 35 55                        |       | 18 00            |      |                                 |      |                               |      |                 |      |               |      |                |      |               |      | 53 55     |      |
| Sturgeon.....             |               |      | 33 70                        |       |                  |      |                                 |      | 22 45                         |      |                 |      | 2 25          |      |                |      |               |      | 58 40     |      |
| Keppel .....              |               |      | 189 45                       |       |                  |      | 214 70                          |      | 30 95                         |      |                 |      | 3 00          |      |                |      |               |      | 438 10    |      |
| Manito.....               |               |      | 79 00                        |       |                  |      | 656 50                          |      | 54 95                         |      |                 |      | 7 75          |      |                |      |               |      | 798 20    |      |
| Dundurn.....              |               |      | 1 50                         |       |                  |      | 152 15                          |      | 3 75                          |      |                 |      | 2 50          |      |                |      |               |      | 159 90    |      |
| Seward.....               |               |      |                              |       |                  |      | 221 25                          |      | 37 75                         |      |                 |      | 3 00          |      |                |      |               |      | 262 00    |      |
| Elbow.....                |               |      | 12 25                        |       | 1 50             |      | 351 10                          |      | 101 90                        |      |                 |      | 6 25          |      |                |      |               |      | 473 00    |      |
| Cypress Hills.....        | 31 74         |      | 518 65                       |       | 3 00             |      |                                 |      | 524 50                        |      | 30 00           |      |               |      |                |      |               |      | 1,107 89  |      |
| Cooking Lake....          |               |      | 321 50                       |       | 122 80           |      | 131 40                          |      | 200 55                        |      |                 |      |               |      |                |      |               |      | 776 25    |      |
| Crowsnest.....            | 4,820 87      |      | 614 79                       |       | 91 70            |      | 2,780 26                        |      | 50 50                         |      | 53 55           |      | 24 75         |      |                |      |               |      | 8,436 42  |      |
| Bow River.....            |               |      | 151 42                       |       | 7 04             |      | 1,527 29                        |      | 62 40                         |      | 42 79           |      | 27 75         |      |                |      |               |      | 1,818 69  |      |
| Clearwater.....           | 5,454.48      |      | 230 75                       |       |                  |      | 48 90                           |      | 17 75                         |      | 60 01           |      | 99 75         |      |                |      | 73 60         |      | 5,985 24  |      |
| Brazee.....               | 2,637 06      |      | 837 94                       |       | 331 57           |      |                                 |      | 10 25                         |      | 40 00           |      | 99 25         |      |                |      |               |      | 3,956 07  |      |
| Athabaska.....            |               |      |                              |       |                  |      | 10 95                           |      | 1 45                          |      |                 |      |               |      |                |      |               |      | 12 40     |      |
| Lesser Slave.....         | 50 00         |      | 0 25                         |       |                  |      |                                 |      | 2 00                          |      |                 |      |               |      |                |      | 0 25          |      | 52 50     |      |
| British Columbia Reserves | 50 00         |      | 462 45                       |       | 223 78           |      |                                 |      | 13 35                         |      | 93 40           |      | 62 00         |      |                |      |               |      | 935 25    |      |
| Indian Head.....          |               |      |                              |       |                  |      |                                 |      |                               |      |                 |      |               |      |                |      | 1,452 90      |      | 3,496 90  |      |
| Total.....                | 16,969 40     |      | 22,632 22                    |       | 2,307 62         |      | 8,706 67                        |      | 2,891 30                      |      | 616 35          |      | 1,089 50      |      | 2,044 00       |      | 1,608 00      |      | 58,865 06 |      |



STATEMENT of Timber Permits issued on Forest Reserves in the Fiscal Year, 1917-18.

| Reserve.                       | No. of Permits. |       | Kinds and Quantities of Timber Authorized to be Cut. |              |             |              |                |             |           |        |           |  | Dues and Fees. |
|--------------------------------|-----------------|-------|--|--------------|-------------|--------------|----------------|-------------|-----------|--------|-----------|--|----------------|
|                                | Free.           | Paid. | Poles or Rails.                                      | Fence Posts. | Saw Timber. | Mine Timber. | Building Logs. | Fuel Green. | Fuel Dry. | Cords. | Cords.    |  |                |
| Turtle Mountain.....           | 72              | 15    |  | 1,350        | 11,000      |              | 1,440          |             | 1,913     |        | 69 45     |  |                |
| Spruce Woods.....              | 47              | 4     |  |              |             |              |                |             | 769       |        | 25 50     |  |                |
| Riding Mountain.....           | 528             | 683   | 4,725  | 54,207       | 4,168,205   |              | 60,549         | 433         | 7,147     |        | 10,756 72 |  |                |
| Duck Mountain.....             | 238             | 207   | 4,800  | 16,975       | 1,342,298   |              | 24,867         | 5           | 3,372     |        | 3,266 45  |  |                |
| Moose Mountain.....            | 21              | 117   | 1,640  | 6,625        | 1,200       |              | 5,360          | 555         | 496       |        | 344 50    |  |                |
| Beaver Hills.....              | 78              | 2     |  |              | 21,768      |              | 2,200          |             | 805       |        | 31 00     |  |                |
| Porcupine.....                 | 122             | 41    | 14,600   | 11,800       | 1,069,177   |              | 31,800         |             | 565       |        | 888 23    |  |                |
| Pasquia.....                   | 11              | 55    | 4,800  | 19,789       | 27,250      |              | 3,000          |             | 5,622     |        | 2,226 80  |  |                |
| Fort à la Corne.....           | 95              | 65    | 17,274   | 9,955        | 152,139     |              | 41,443         |             | 1,206     |        | 392 14    |  |                |
| Pines.....                     | 13              | 29    | 1,830  | 4,860        | 175         |              | 6,215          | 200         | 930       |        | 414 80    |  |                |
| Nisbet.....                    | 59              | 41    |  | 2,911        | 45,571      |              | 3,000          |             | 1,955     |        | 343 81    |  |                |
| Big River.....                 | 13              |       | 500  | 600          |             |              |                |             | 235       |        | 3 25      |  |                |
| Steep Creek.....               | 10              | 9     |  | 1,050        | 1,400       |              | 260            |             | 323       |        | 35 55     |  |                |
| Keppel.....                    | 99              | 93    | 7,165  | 2,300        | 2,500       |              | 26,150         | 470         | 1,295     |        | 189 45    |  |                |
| Sturgeon.....                  | 9               | 4     | 8,050  | 1,330        |             |              | 7,450          |             | 80        |        | 33 70     |  |                |
| Elbow.....                     | 9               |       |  |              |             |              |                |             | 61        |        | 2 25      |  |                |
| Manito.....                    | 25              | 30    | 4,900  | 1,225        |             |              | 2,000          | 153         | 436       |        | 79 00     |  |                |
| Dundurn.....                   | 6               |       |  |              |             |              |                |             | 150       |        | 1 50      |  |                |
| Cypress Hills.....             | 175             | 175   | 78,962   | 30,410       |             |              | 50,100         | 239         | 2,399     |        | 518 65    |  |                |
| Cooking Lake.....              | 40              | 33    | 200  | 1,800        | 7,500       | 50,000       | 20,900         |             | 1,007     |        | 321 50    |  |                |
| Crowsnest.....                 | 116             | 80    | 15,958   | 10,820       | 12,500      | 90,800       | 24,492         | 8           | 2,553     |        | 614 79    |  |                |
| Bow River.....                 | 26              | 26    | 50,88  | 2,690        |             |              | 6,265          |             | 740       |        | 151 42    |  |                |
| Clearwater.....                | 22              | 12    |  |              |             | 23,000       | 800            |             | 713       |        | 230 75    |  |                |
| Brazeau.....                   | 8               | 9     | 63   |              |             | 254,000      | 4,938          |             | 150       |        | 837 94    |  |                |
| Athabasca.....                 | 1               |       |  |              |             |              | 100            |             |           |        | 0 25      |  |                |
| British Columbia Reserves..... | 8               | 27    | 200  | 250          |             | 1,092        | 20,795         |             | 1,714     |        | 462 45    |  |                |
| Total.....                     | 1,851           | 1,762 | 170,755  | 180,947      | 6,862,983   | 418,892      | 344,124        | 2,063       | 36,636    |        | 22,241 85 |  |                |



9 GEORGE V, A. 1919

## STATEMENT of Grazing Permits issued in the Fiscal Year, 1917-18.

| Reserve.             | No. of Permits. | Number of Stock. |         |                |        | Dues and fees collected. |
|----------------------|-----------------|------------------|---------|----------------|--------|--------------------------|
|                      |                 | Cattle.          | Horses. | Sheep or Hogs. | Total. |                          |
|                      |                 |                  |         |                |        | \$ cts.                  |
| Turtle Mountain..... | 87              | 1,221            | 125     | .....          | 1,346  | 1,254 25                 |
| Riding Mountain..... | 14              | 705              | 23      | .....          | 728    | 261 50                   |
| Duck Mountain.....   | 7               | 542              | 2       | .....          | 544    | 117 50                   |
| Spruce Woods.....    | 26              | 367              | 38      | 553            | 958    | 441 75                   |
| Moose Mountain.....  | 21              | 560              | 30      | .....          | 590    | 150 75                   |
| Porcupine.....       | 8               | 235              | 18      | .....          | 253    | 51 50                    |
| Pasquia.....         | 2               | 26               | 15      | .....          | 41     | 8 30                     |
| Pines.....           | 5               | 221              | 14      | 35             | 270    | 58 70                    |
| Beaver Hills.....    | 12              | 357              | 10      | .....          | 367    | 110 85                   |
| Nisbet.....          | 6               | 72               | 8       | 7              | 87     | 25 20                    |
| Keppel.....          | 49              | 778              | 91      | .....          | 869    | 214 70                   |
| Big River.....       | 3               | 424              | 3       | .....          | 427    | 38 85                    |
| Manito.....          | 54              | 1,860            | 280     | 24             | 2,164  | 656 50                   |
| Elbow.....           | 52              | 1,170            | 135     | .....          | 1,305  | 351 10                   |
| Seward.....          | 18              | 320              | 131     | .....          | 451    | 221 25                   |
| Dundurn.....         | 8               | 455              | 83      | .....          | 538    | 152 15                   |
| Crowsnest.....       | 70              | 5,525            | 699     | 6,000          | 12,224 | 2,780 26                 |
| Bow River.....       | 53              | 3,420            | 668     | .....          | 4,088  | 1,527 29                 |
| Clearwater.....      | 5               | 79               | 64      | .....          | 143    | 48 90                    |
| Athabaska.....       | 3               | .....            | 34      | .....          | 34     | 10 95                    |
| Cooking Lake.....    | 13              | 437              | 27      | .....          | 464    | 131 40                   |
| Total.....           | 516             | 18,774           | 2,498   | 6,619          | 27,891 | 8,613 65                 |

## TIMBER Cut on Forest Reserves under authority of Timber Sales in the Fiscal Year, 1917-18.

| Reserve.            | Previous Sales still operating. | Sales made Current Year. | Saw Timber. | Mine Timber. |          |          |                     | Dues collected. |
|---------------------|---------------------------------|--------------------------|-------------|--------------|----------|----------|---------------------|-----------------|
|                     |                                 |                          |             | Props.       | Props.   | Lagging. | Lagging.            |                 |
|                     |                                 |                          | Ft. B.M.    | Ft. B.M.     | Lin. Ft. | Cords.   |                     | \$ cts.         |
| Fort à la Corne.... | 1                               | .....                    | 57,639      | .....        | .....    | .....    | .....               | 36 71           |
| Pasquia.....        | 1                               | 2                        | 359,477     | .....        | .....    | .....    | .....               | 50 00           |
| Porcupine.....      | 1                               | 1                        | 52,164      | .....        | .....    | .....    | .....               | 105 49          |
| Big River.....      | 1                               | .....                    | 401,881     | .....        | .....    | .....    | .....               | 975 64          |
| Cypress Hills.....  | 1                               | .....                    | 38,989      | .....        | .....    | .....    | .....               | 31 74           |
| Crowsnest.....      | 6                               | .....                    | 333,718     | .....        | 529,189  | 2,245    | Ft. B.M.<br>591,501 | 2,238 87        |
| Clearwater.....     | 1                               | .....                    | 319,922     | 1,719,618    | .....    | 606      | .....               | 5,451 48        |
| Brazeau.....        | 2                               | 1                        | .....       | 274,216      | 319,188  | 223      | Lin. Ft.<br>871,730 | 1,457 74        |
| Total.....          | 14                              | 4                        | 1,563,790   | 1,993,834    | 848,377  | 3,074    | .....               | 10,350 67       |



## SESSIONAL PAPER No. 25

STATEMENT showing the quantity of Timber Sold and Revenue Due during Fiscal Year ending March 31, 1918 on License Timber Berths within Dominion Forest Reserves.

## MANITOBA.

| Forest Reserve.   | Timber Berths. | Area in Reserve. | Quantities Sold. |           |                 | Revenue.      |               |                |
|-------------------|----------------|------------------|------------------|-----------|-----------------|---------------|---------------|----------------|
|                   |                |                  | Lumber.          | Lath.     | Other* Products | Dues Payable. | Rent Payable. | Total Payable. |
|                   | No.            | Sq. Mls.         | Ft. B.M.         | No.       |                 | \$ cts.       | \$ cts.       | \$ cts.        |
| Riding Mountain.. | 4              | 4,443            | 325,000          |           |                 | 85 00         | 222 15        | 307 15         |
| Duck Mountain.... | 11             | 9,998            | 8,706,135        | 3,537,600 | 12,650          | 5,243 25      | 499 90        | 5,742 90       |
| Total.....        | 15             | 14,441           | 9,031,135        | 3,537,600 |                 | 5,328 25      | 722 05        | 6,050 05       |

## SASKATCHEWAN.

|                            |    |         |            |            |        |           |          |           |
|----------------------------|----|---------|------------|------------|--------|-----------|----------|-----------|
| Porcupine and Pasquia..... | 48 | 98,904  | 22,233,974 | 5,303,650  | 30,623 | 12,454 54 | 4,886 90 | 17,341 44 |
| Sturgeon.....              | 12 | 17,778  | 49,066,934 | 12,290,900 |        | 28,847 78 | 891 33   | 29,739 11 |
| Big River.....             | 3  | 26,077  | 18,585,758 | 5,571,850  |        | 3,930 38  | 1,303 85 | 5,234 23  |
| Nisbet and Pines..         | 5  | 11,680  |            |            | 12,319 | 793 12    | 173 15   | 966 27    |
| Total.....                 | 68 | 154,439 | 89,886,666 | 23,166,400 |        | 46,025 82 | 7,455 23 | 53,481 05 |

## ALBERTA.

|                 |    |         |            |         |         |          |          |           |
|-----------------|----|---------|------------|---------|---------|----------|----------|-----------|
| Crowsnest.....  | 12 | 25,919  | 7,282,110  |         | 722,117 | 4,089 07 | 1,295 95 | 5,385 02  |
| Bow River.....  | 16 | 37,444  | 3,867,319  | 949,850 | 149     | 1,887 43 | 1,860 95 | 3,748 38  |
| Clearwater..... | 4  | 37,756  |            |         |         |          | 1,887 80 | 1,887 80  |
| Brazeau.....    | 12 | 22,626  | 929,323    |         | 10,000  | 553 71   | 1,131 30 | 1,685 01  |
| Total.....      | 44 | 123,745 | 12,078,752 | 949,850 |         | 6,530 21 | 6,176 00 | 12,706 21 |

## BRITISH COLUMBIA.

|                                   |     |         |             |            |  |           |           |           |
|-----------------------------------|-----|---------|-------------|------------|--|-----------|-----------|-----------|
| British Columbia Reserves Total.. | 11  | 13,357  |             |            |  |           | 667 85    | 667 85    |
| Grand Total.....                  | 138 | 305,982 | 110,996,553 | 27,653,850 |  | 57,884 28 | 15,021 13 | 72,905 16 |

\* The figures in this column indicate the number of units upon which the dues were collected. They include the following: 2,646 cords of wood, 10,875 fence-posts, 12,650 pieces of driftwood, 2,002 lineal feet of boom timber, 27,855 lineal feet of piling, 721,830 lineal feet of mine timber, and 10,000 railway cross-ties.







PART IV  
IRRIGATION







IRRIGATION

REPORT OF THE SUPERINTENDENT OF IRRIGATION.  
E. F. DRAKE.

The past year has shown little development work in connection with irrigation. The high cost of labour and material has, naturally, discouraged construction work. The farmers have, generally, concentrated their efforts upon increased production of cereals, which are more easily and less expensively grown, and which require less labour than irrigated crops. The good yields for the past three years, coupled with the prevailing high prices, have amply justified this course.

A comparison of the acreage under cultivation for cereals in the years 1915 to 1917, inclusive, with the yield per acre and the price per bushel, is interesting. In Alberta the area sown to wheat increased in each of these years but the total yield decreased slightly for 1916 and considerably for 1917. In each case, however, the increased price more than compensated for the decreased yield. The 1917 crop of 18 bushels per acre, at an average price of \$1.74 per bushel, was even more profitable to the producers than the bumper crop of 1915, at 31 bushels per acre and 88 cents per bushel. The yield of wheat per acre decreased in close relation to the rainfall during the crop-producing season. Oats and barley showed a steady increase in area and value during this period, although the per acre yield in 1917 was about 25 per cent less than in 1916.

In Saskatchewan the area of wheat under cultivation increased slightly for 1916, but decreased appreciably for 1917, while the total yield decreased each year. Owing to the prevalence of rust in 1916, the total yield was so reduced that the total value also showed a decrease, but, with a still further decrease in yield in 1917, the value of the crop was a maximum for the three-year period. Oats and barley showed a steady increase in area and value, but the total yield of oats for 1917 showed a decrease.

The following tables are based upon the best obtainable information. The "normal prices" are estimated, and are, possibly, rather high, but precise information of average prices for past years is not readily obtainable:—

TABLE showing Yields of Wheat, Oats and Barley, in Alberta, for the years 1915, 1916 and 1917.

| Crop and Year. | Yield<br>per<br>Acre. | Average<br>Price per<br>Bushel. | Average Price<br>per Acre. |     | Yield<br>per<br>Acre. | Rainfall at<br>Calgary, April to<br>August. |     |
|----------------|-----------------------|---------------------------------|----------------------------|-----|-----------------------|---|-----|
|                | Bush.                 | \$                              | \$                         | %   | %                     | Inches.                                     | %   |
| <i>Wheat—</i>  |                       |                                 |                            |     |                       |   |     |
| Normal .....   | 22·5 <sup>1</sup>     | 1·00 <sup>2</sup>               | 22·50                      | 100 | 100                   | 11·56 <sup>3</sup>                          | 100 |
| 1915.....      | 31·12                 | ·88                             | 27·39                      | 122 | 138                   | 12·27                                       | 106 |
| 1916.....      | 24·99                 | 1·33                            | 33·24                      | 148 | 111                   | 8·93  | 77  |
| 1917.....      | 18·25                 | 1·74                            | 31·76                      | 141 | 81                    | 6·63  | 57  |
| <i>Oats—</i>   |                       |                                 |                            |     |                       |   |     |
| Normal .....   | 42·00 <sup>1</sup>    | ·34 <sup>2</sup>                | 14·28                      | 100 | 100                   |   |     |
| 1915 .....     | 45·91                 | ·31                             | 14·23                      | 100 | 109                   |   |     |
| 1916 .....     | 48·11                 | ·46                             | 22·13                      | 155 | 115                   |   |     |
| 1917.....      | 34·00                 | ·63                             | 21·42                      | 150 | 81                    |   |     |
| <i>Barley—</i> |                       |                                 |                            |     |                       |   |     |
| Normal .....   | 28·25 <sup>1</sup>    | ·50 <sup>2</sup>                | 14·12                      | 100 | 100                   |   |     |
| 1915.....      | 32·31                 | ·44                             | 14·22                      | 101 | 114                   |   |     |
| 1916.....      | 29·04                 | ·71                             | 20·62                      | 146 | 103                   |   |     |
| 1917 .....     | 22·00                 | ·98                             | 21·56                      | 153 | 78                    |   |     |

<sup>1</sup> Average for 10 years, 1908-1917.    <sup>2</sup> Estimated.    <sup>3</sup> Average for 30 years, 1885-1914.



TABLE showing Yields of Wheat, Oats, and Barley, in Saskatchewan, for the years 1915, 1916 and 1917.

| Crop and Year. | Yield<br>per<br>Acre. | Average<br>Price per<br>Bushel. | Average Price<br>per Acre. |     | Yield<br>per<br>Acre. | Rainfall at Swift<br>Current from<br>April to August. |     |
|----------------|-----------------------|---------------------------------|----------------------------|-----|-----------------------|---|-----|
|                | Bush.                 | \$                              | \$                         | ¢   | %                     | Inches.   | %   |
| <i>Wheat—</i>  |                       |                                 |                            |     |                       |   |     |
| Normal .....   | 18.50 <sup>1</sup>    | 1.00 <sup>2</sup>               | 18.50                      | 100 | 100                   | 10.00 <sup>3</sup>                                    | 100 |
| 1915.....      | 25.12                 | .91                             | 22.86                      | 124 | 136                   | 10.14   | 101 |
| 1916.....      | 16.34                 | 1.28                            | 20.92                      | 113 | 88 <sup>4</sup>       | 14.09   | 141 |
| 1917.....      | 14.25                 | 1.95                            | 27.79                      | 150 | 77                    | 5.12  | 51  |
| <i>Oats—</i>   |                       |                                 |                            |     |                       |   |     |
| Normal .....   | 38.25 <sup>1</sup>    | .31 <sup>2</sup>                | 13.00                      | 100 | 100                   |   |     |
| 1915.....      | 43.48                 | .32                             | 13.91                      | 107 | 114                   |   |     |
| 1916.....      | 43.06                 | .46                             | 19.81                      | 152 | 113                   |   |     |
| 1917.....      | 27.25                 | .62                             | 16.90                      | 130 | 71                    |   |     |
| <i>Barley—</i> |                       |                                 |                            |     |                       |   |     |
| Normal. ....   | 26.75 <sup>1</sup>    | .50 <sup>2</sup>                | 13.38                      | 100 | 100                   |   |     |
| 1915.....      | 31.74                 | .46                             | 14.06                      | 109 | 119                   |   |     |
| 1916.....      | 27.00                 | .77                             | 20.08                      | 155 | 101                   |   |     |
| 1917.....      | 21.00                 | 1.00                            | 21.00                      | 157 | 79                    |   |     |

<sup>1</sup>Average for 10 years, 1908-1917.      <sup>2</sup>Estimated.      <sup>3</sup>Average for 30 years, 1885-1914.  
<sup>4</sup> Results affected by rust.

It is apparent from the reports received from our inspecting engineers, that irrigation development is not progressing satisfactorily in southern Alberta and southwestern Saskatchewan. A great deal of time and money has been spent in the construction of "irrigation works," that is, in canals and ditches for conveying water to the land. This money has not been wasted. Such works are necessary, as without them the land cannot be irrigated, but they alone are not sufficient to produce really beneficial results. It is undoubtedly true that few of the privately owned irrigation projects in these provinces are producing the results hoped for by their owners. There is much disappointment and even discouragement.

But it would be unfair to conclude, as some apparently have, that irrigation is therefore a failure. While in too many cases the results have been unsatisfactory, and in some cases even harmful, the causes are readily apparent and the remedy is available to those who are willing to apply it.

The average farmer who professes to practise irrigated farming really does nothing of the kind. He may *irrigate*, after a fashion; that is, he may at considerable expense build a ditch for the conveyance of water to his land, but *irrigated farming* means something more than merely turning water loose to flow at will over a tract of land, and that is practically all that has been done in very many cases. Usually little, if any, attempt is made to smooth the land. If the land is below the level of the supply ditch, if it seems to be fairly smooth and to have a reasonable slope, the usual practice is to turn the water out of the supply ditch at one or several points, and allow it to wander at will over the field. It is soon apparent, as the water spreads, that the surface which seemed so smooth is far from being so; it is usually a maze of shallow depressions, with intervening low knolls or ridges. Parts of such a field will receive no water, while other parts will receive so much that after a few years of this haphazard "system" of irrigation even the native grasses are drowned out and replaced by fox tail and other inferior grasses, and if there is alkali in the soil such over-irrigation brings it to the surface, with most injurious consequences



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Bringing the water to the land is but the first step in the art of irrigated farming; the other steps, without which no real success can be obtained, are:—

1. Thorough smoothing of the soil and preparation by means of dykes, borders, etc., for the control of water, so that all parts of the field may receive an even saturation;
2. Construction of drainage ditches to receive and carry off surplus water;
3. More frequent and less copious irrigations, where the conditions of water supply will permit.

But it is not always possible to practise irrigated farming as it should be done. Lack of capital, and the difficulty of obtaining labour when required, coupled with the necessity for producing as quickly and cheaply as possible the most readily saleable form of crop, account, in many cases, for the failure of settlers to utilize their irrigable land to the fullest advantage. It is unquestionably true, however, that in other cases the means have been available, but heedlessly, have not been applied. No excuse can be found for those who, having invested in a system of irrigation works, and having at their disposal capital and other means for making their investment profitable, neglect to take advantage of their opportunities.

The engineers of the Irrigation Branch have for several years, and notably for the past two years, been instructed to afford all possible advice and assistance to settlers regarding the proper methods of irrigating, the most desirable crops to grow, having regard to climatic and soil conditions, etc., and, generally, to place their services unreservedly at the disposal of all settlers. Some good has doubtless been accomplished in this way, but not as much as had been hoped for. Our officers are, primarily, engineers rather than agriculturists, and, while in the course of their duties they have acquired considerable knowledge of up-to-date agricultural methods, they cannot and do not, profess to be agricultural experts. We have found that settlers are generally willing to follow the advice of our inspecting officers in the design and construction of irrigation systems, and, to a limited extent, in the methods of applying water to the soil. When, however, our officers have attempted to give advice upon purely agricultural questions it has, as a rule, either not been very well received or ignored. Much of the stagnation in irrigation development is probably due to ignorance on the part of the settlers as to the proper methods to follow in order to produce the best results, and it would seem that the time is now ripe for a campaign of education along this line. Efforts are being made to secure competent agricultural experts who can first be taught the essential features of irrigation practice, and thereafter be assigned to the duty of advising and instructing the settlers. It is difficult, however, at this time to secure properly qualified men for this work, and there is very little prospect of much development along this line as long as the war continues.

Efforts are also being made to effect some system of co-operation between the engineers of the Irrigation Branch and the agricultural experts in the service of the Dominion and Provincial Departments of Agriculture, but here again the chief difficulty is the lack of competent men.

## HYDROMETRIC SURVEYS (STREAM MEASUREMENTS).

The work of stream measurements has been continued as in former years. A few new stations have been established, while some of the older stations at which records have been obtained for several successive years have been abandoned. Generally, the policy has been to extend the work only where absolutely necessary, and to economize wherever possible by combining the work of stream measurement with that of irrigation inspections, so that one man may cover the territory formerly assigned to two.



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During the open-water season, 169 gauging stations were maintained on streams and 7 stations on lakes; records were also obtained at 104 gauges on irrigation canals and ditches, while miscellaneous measurements were taken at 142 points on streams, ditches, and at springs. During the winter season, 102 regular stations were maintained.

The development of mining in northern Saskatchewan, and applications for power rights on Churchill river, directed attention to the lack of precise information of stream flow, particularly winter flow. An engineer of the Water Power Branch had taken some flow measurements during the summer of 1916, but these merely emphasized the necessity of securing fuller data covering the winter or low-water period, and this branch was asked to undertake the work.

Owing to the absence at "the front" of so many of our more experienced engineers, we had no one available who was qualified by past experience in sub-arctic travel to undertake the somewhat hazardous journey to this remote district in winter, and to remain there, practically alone, for the winter season. We were, however, fortunately able to secure the services of Mr. R. D. Fry, a well-qualified engineer with considerable experience in northern travel. Mr. Fry left Pas on the 22nd December, 1917, and returned to that point on the 5th April, 1918, the journey from Pas to Churchill river and return, being made by dog train. The records of stream flow secured by Mr. Fry are interesting and valuable, and will be published later in bulletin form. The manuscript records have, in the meantime, been placed at the disposal of the Water Power Branch.

Mr. Fry could, undoubtedly, have written a very readable and interesting report of his journey and of the incidents of life in the sub-arctic wilderness during the winter, but with characteristic modesty he confines himself to the briefest possible statement regarding the journey, and deals in his report only with the work which he was sent to do. His reference to the journey consists of the following laconic statement:—

"I left Pas Saturday, December 22, with two men and two dog trains, by way of Reeder, Rock, and Sturgeon-Namew lakes, arriving at Beaver Landing on December 24, where I commenced work at the outlet of Beaver Amisk lake. Then I proceeded north, metering Scooping rapids on the Sturgeon-weir river on my way, reaching the mouth of the Reindeer on January 12, where I made my headquarters camp during the winter's work."

#### INTERNATIONAL WATERWAYS TREATY.

##### (ST. MARY-MILK RIVER CASE.)

Article VI. of the treaty of January 11, 1909, between Great Britain and the United States, defines the manner in which the waters of the St. Mary and Milk rivers and their tributaries are to be measured and apportioned between Canada and the United States, under the direction of the International Joint Commission.

Public hearings of all the interested parties were held before the commission in May, 1915, and May, 1917, but no final decision has been given. In August, 1917, Mr. P. B. Mignault, one of the Canadian members of the commission, visited the West and accompanied by myself, went over the district involved; he examined the lands alleged to be irrigable and the works constructed or planned for the purpose of irrigating them.

The case was again taken under consideration by the commission in November, 1917, and at subsequent meetings and in the meantime, the officials of the United States Reclamation Service and Geological Survey and of the Irrigation Branch of



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the Department of the Interior were authorized to study the stream flow data with a view to assisting the commission in reaching a decision upon the points in controversy.

On May 24, 1918, the commission issued an interim order, the purport of which is as follows:—

Before the beginning of the irrigation season of each year the proper officers of the United States and Canada shall, after conferring together, prepare a statement showing the total actual requirements of water for irrigation purposes of the United States and the Dominion of Canada, respectively, in the drainage basins of the St. Mary and Milk rivers during the irrigation season of that year, estimating the total amount of water required for each month of the season and the total acreage of land it is proposed to irrigate.

During the irrigation season the natural flow of the two streams shall be apportioned between the respective countries by their properly constituted reclamation and irrigation officers so as to satisfy in each month, so far as practicable, the actual requirements of each as set forth in the statement, or in any modifications thereof duly made.

The duty of measuring and apportioning the waters has been entrusted to Mr. Arthur P. Davis, Director and Chief Engineer of the United States Reclamation Service, and Mr. Edward F. Drake, Superintendent of Irrigation, Department of the Interior, Canada.

It is quite impossible to make any statement at this time as to whether or not this interim order will provide for a mutually satisfactory division of these waters even as a temporary measure, which it admittedly is. Much will depend upon the nature of the present season; if it should prove to be a "dry year," with the resultant decreased supply, and increased demand for water, difficulties may be expected; while, on the contrary, if there should be abundant rainfall, and the flow of the streams keeps up reasonably well, there will probably be enough water for all.

A number of international gauging stations have already been established by agreement between the Governments of the United States and Canada, and it is proposed to establish several more similar stations during the present year in order that the fullest possible information may be obtained regarding the quantity of water available and the use to which it is being put. The cost of installing these stations is shared equally between the two countries, as is also the cost of maintenance and of observations.

## WATER SUPPLY INVESTIGATIONS.

The difficulty of obtaining water in portions of southern Alberta and Saskatchewan has been one of the drawbacks to the settlement of those districts, particularly along the lines of mixed farming. In the earlier days of settlement of the West certain districts assumed to be semi-arid were avoided by settlers, and enormous areas of this character were used only for ranching. But settlement gradually encroached upon these drier areas, small towns sprang up along the lines of railways, and each of these became the nucleus of, or distributing point for, a scattered farming community.

Given two or three years of fairly abundant rainfall, the farmers prospered, settlement increased, the villages and towns increased rapidly in size, and ranching gradually gave place to farming. But, unfortunately, dry years, or cycles of dry years, usually followed quickly, crops withered and failed from lack of moisture, the scanty sources of surface water supply dried up, and it became necessary to haul water in tanks or barrels for even domestic use. The small towns which had relied upon shallow wells, local streams or springs, found their supplies dried up or seriously depleted and were compelled to sink deeper wells or to go farther afield and pipe water from more distant sources at high cost. Successive dry years, with partial or complete crop



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failure, resulted in the abandonment of many farms acquired under the homestead or pre-emption regulations, and in the general impoverishment of the settlers.

It is easier to recite the conditions obtaining in these semi-arid districts than to indicate the remedy. Improved methods of farming will help. Dry farming, or rather scientific farming methods, if properly applied and consistently followed, will doubtless make possible the growing of profitable crops *in alternate years* in regions where the annual rainfall is usually insufficient for profitable farming as it is practised in humid districts. Irrigation will also help where water can be brought to the land at reasonable cost and in sufficient quantity, and where the settlers will take the time and trouble to really master the art of crop production under this form of agriculture. One or the other of these, or both of them in combination, offer the best, if not the only, prospect of assured prosperity in regions of scanty rainfall.

But even though improved farming methods and the practice of irrigation may be generally adopted, the question of water supply remains unsolved. Living conditions cannot be regarded as satisfactory where the water supply is scanty or poor in quality, particularly where water for domestic use must be hauled for several miles. The question of domestic water supply has therefore naturally received a good deal of attention from the Dominion and Provincial Governments and at the hands of municipal and other organized bodies throughout the drier portions of the West.

Upon the initiative of the Lethbridge Board of Trade a "Water Conference" was held at Lethbridge, Alta., on June 22, 1917, which was attended by representatives of the Dominion and Provincial Governments and by many prominent persons who were interested in this problem or were likely to be able to assist in its solution.

The Dominion Government was urged to reserve land bordering on rivers, lakes, and other sources of water supply, to afford sanctuary for stock in times of drought and the co-operation of the Provincial Governments was asked in order that practicable road approaches might be provided giving access to these reserves.

The Dominion Government was also asked to arrange for the diversion of water from Milk river through the canals of the Alberta Railway and Irrigation Company, for the use of settlers along Etzikom coulée and in the vicinity of Pakowki lake.

Steps are being taken to examine the lands available for such reservation, and to determine whether or not they should be set apart for the purpose suggested. Fifty-two cancelled stock-watering reserves were inspected and reported upon by engineers of this branch during the season of 1917, and a considerable number of these, which otherwise would have been sold at public auction, have been reserved for water supply purposes. The remainder of the reserves, or as many of them as possible, will be inspected during the season of 1918.

Another phase of this question that is receiving attention at the hands of the engineers of the Irrigation Branch is the investigation of all sources of water supply, whether from streams, springs, or wells. Our engineers have been instructed to inquire carefully into this question in the course of their ordinary trips of inspection, and thus, without increasing our staff or noticeably adding to our expenditures, we have been able to accumulate a fund of valuable information which is being studied and tabulated and prepared for general use. Our engineers inspected 288 wells and 54 other sources of water supply during the season of 1917. This line of investigation will be continued throughout the current year.

Regarding the diversion of water from Milk river, through the Alberta Railway and Irrigation Company canals, by way of Stirling and Etzikom coulée and Pakowki lake, there are at present no facilities for diverting water from Milk river. The company built a canal several years ago, but the dam and headgates were subsequently destroyed by flood, the canal has been injured by slides in several sections, and, generally, the system is not in condition for use. It is believed, however, that it could be restored and made available for use at moderate cost, and there is some prospect of the company undertaking to restore this canal at an early date.



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## ALKALI INVESTIGATIONS.

In certain portions of the provinces of Alberta and Saskatchewan in which irrigation is practised, the presence of alkali has made it doubtful whether certain strongly impregnated soils were suitable for irrigated agriculture. In a few cases the surface indications were sufficient to permit of satisfactory conclusions being reached, but in the vast majority of cases chemical analyses are required, not only of the surface soil, but of the subsoil to a depth of four or five feet. A large number of samples has been collected by our field engineers and forwarded to Ottawa, where they have been tested in the chemical laboratory at the Central Experimental Farm.

Comparative specimens of soils from alkali and adjoining lands have also been secured in order to obtain data for establishing standard limits of tolerance. These samples have been tested and analysed and will form the basis for future work of a similar nature, affording very necessary information for determining the relative toxic effects of varying concentrations upon different crops in several localities. Other soils have been analysed in connection with specific undertakings, and several specimens of deteriorated concrete have been dealt with and passed upon by Dr. Shutt, Dominion Chemist, under whose direction this section of our work is carried on.

## DRAINAGE.

There has been little development in connection with the reclamation of submerged or swamp lands by means of drainage. A few small projects have been authorized under the provisions of Section 1 of the Alberta Reclamation Act, and works are now being constructed. There are several similar applications now under consideration under Section 1 of the Saskatchewan Reclamation Act, but the construction of works has not as yet been authorized. No larger projects are as yet under construction, although in the province of Alberta two or three drainage districts are in course of formation. The high cost and scarcity of labour have not tended to encourage work of this character under present conditions. Instructions have been given for the inspection and survey of two proposed drainage projects of considerable size in the province of Saskatchewan but with our reduced staff of engineers it is doubtful if the work can be undertaken this year; it will be done if possible.

## REPORT OF THE COMMISSIONER OF IRRIGATION.

F. H. PETERS.

## ORGANIZATION OF STAFF.

The organization of the staff was similar to that of last year, with the proposed change carried into effect of combining the irrigation and hydrometric work in certain districts. All field survey development work having been discontinued, the staff—mainly in the field, but also in the office—has been correspondingly decreased in comparison with the years prior to 1917.

## STREAM ADMINISTRATION.

This very important work of transferring our records to the new system which has been developed was carried on actively throughout the year. One office engineer devoted all of his time to his work and considerable assistance was given by another office engineer. The progress made on this work was again disappointing and it will take another year to get all the details completed. Nearly every stream has been dealt



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with and all the necessary data and information collected and arranged for future use. Great difficulties have been met with in this work because new complications have arisen just as the work was developed and also in a great many cases the complete physical data necessary have been found lacking in one respect or another.

#### HYDROMETRIC SURVEYS.

The organization of the regular work was similar to that of previous years. The only change from last year was that in all the southern districts the duties of the irrigation inspecting engineer and district hydrometric engineer were combined. The territory was therefore divided into thirteen districts, with an engineer in charge of each. In six of these one engineer did both irrigation inspections and hydrometric work; the remaining seven did hydrometric work only. The engineer in charge of the Calgary district also looked after the current-meter rating station.

During the open-water season, records were taken at 168 regular gauging stations on streams in Alberta and Saskatchewan, 158 gauging stations on irrigation canals and ditches, and 5 stations on lakes. Winter records were taken at 96 regular stations on streams during the past winter.

During the year 52 current-meters were rated; two belonged to the Shawinigan Water and Power Company, 11 to the British Columbia Hydrometric Survey, 5 to the Manitoba Hydrometric Survey, 2 to the Canadian Pacific Railway Company, and the balance, 30, belong to this branch.

The assignment of the office staff was nearly the same as last year, but the efficiency of the staff was somewhat impaired by changes in the personnel.

#### FIELD WORK.

The field work necessary for administration was carried on in much the same manner as last year, but a few changes which affected the work to a considerable extent are being noted.

Over a considerable area of the drier parts of Alberta and Saskatchewan, the question of water supply for domestic, municipal, and industrial purposes, is one of prime importance. It may be said without any fear of contradiction or the slightest exaggeration, that in certain districts the agricultural and community development is absolutely dependent upon the development of a sufficient supply of water. There is nothing new about this fact, but, like many other essential facts, it is often overlooked or forgotten. Thanks, largely, to the farsightedness and activity of the Lethbridge Board of Trade, this feature as outlined above was prominently brought forward in the fall of 1916, and in February, 1917, the question was taken up by the Scientific and Industrial Research Committee at Ottawa.

As a direct result of the information given to the committee concerning the work being done along these lines by the Geological Survey and Irrigation Branch, it was arranged that our inspecting engineers would collect all the data possible in their respective districts concerning domestic water supplies and wells. The information was to be collected to indicate the surface supply that is now available, and in connection with the deeper wells special attention was to be given to getting a log of the well so that this special information, dealing with the underground geological conditions, could be supplied to the Geological Survey for their information in determining the possibilities of underground sources of water supply.

Another outcome of the activities of the Lethbridge Board of Trade was the arrangement to cause inspection by our engineers of all stock-watering reserves which have not yet been alienated from the Crown; this with a view to maintaining for the Crown all the remaining water reserves that in future may be valuable in connection with the increased raising of stock by the prairie farmers. These water reserves were very wisely set aside in the old days of the ranching industry, and when this gave place



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to the development of farming it had apparently been assumed, without considered thought, that the usefulness of the water reserves was past.

A considerable amount of work was done during the season by inspecting engineers in making the inspection in connection with matters referred to above. All the data collected were submitted on suitable forms, which have been filed away for ready reference and use in the future.

As we now have hydrometric records over a fairly long period, and as the major portion of the construction work on the smaller irrigation projects has been completed, it was planned this year, in an endeavour to increase the economy and efficiency of the work, to combine irrigation and hydrometric work in certain districts. This was done in the Cypress Hills country, which was divided up into four districts, and also in the case of the Calgary district. The engineer in each district had one assistant.

## CYPRESS HILLS DISTRICT NORTH.

The total number of inspections made was 83, and 7 surveys were made; 75 gaugings were made and 4 new gauging stations were established. Data were gathered concerning 46 wells and 20 domestic water supplies. The number of miles travelled by train was 3,057 and by other means, principally team and democrat, 2,219. These figures include the work done on the special measurement of early spring run-off.

## CYPRESS HILLS DISTRICT SOUTH.

The total number of inspections made was 44, and 2 surveys were made; 118 gaugings were made. Data were gathered concerning 12 wells. The number of miles travelled by train was 151, and by other means 3,318, principally by team and democrat. These figures include the work done on the special measurement of early spring run-off.

## CYPRESS HILLS DISTRICT EAST.

The total number of inspections made was 92, and 6 surveys were made; 115 gaugings were made and one automatic gauge station was constructed, which required eleven days' work. Data were gathered concerning 96 wells and one domestic water supply. The number of miles travelled by train was 3,121 and by other means, principally team and democrat, 2,346. These figures include the work done on the special measurement of early spring run-off.

## CYPRESS HILLS DISTRICT WEST.

The total number of inspections made was 89, and 4 surveys were made; 194 gaugings were made. Data were gathered concerning 48 wells and 2 domestic water supplies. The number of miles travelled by train was 952 and by other means, mainly team and democrat, 3,272. These figures include the work done on the special measurement of early spring run-off.

## MACLEOD DISTRICT.

This district was operated as a combination one, and the irrigation work comprised practically all of the old Calgary irrigation district. The total number of inspections made was 86 and 2 surveys were made. Data were gathered concerning 51 wells and 21 domestic water supplies; 408 gaugings were made. The number of miles travelled by train was 1,911 and by other means, mainly motor car, 5,984.

## MUNICIPAL WATER CONSUMPTION DATA.

The collection and compilation of municipal water consumption data was inaugurated towards the end of the year 1914, and in the year 1915 we received information complete for the year from fifteen cities and towns in Alberta and Sas-



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katchewan. In the following year we received records for the whole year from the same cities and towns.

During the year 1916 an endeavour was made to obtain these data from a greater number of places, with the result that for the year 1917 we have received complete records for the year from twenty-one cities and towns in Alberta.

#### LARGE IRRIGATION PROJECTS.

##### *Eastern Section, C.P.R. Irrigation Block.*

Part of the system has been in operation, and in that connection some repair and maintenance work has been done by the company. The only field inspections made were in connection with the reconstruction of the Antelope Creek Siphon and some instances of disintegration of concrete by alkali action.

##### *Alberta Railway and Irrigation Company.*

A field inspection of the system was made for the purpose of making a report on the condition of works. The authorized term for the completion of the construction of the works expired in October, 1917, but an extension of five years has been granted.

The system has been in operation as usual. Some work of repairs and improvements has been in progress.

##### *Canada Land and Irrigation Company, Limited.*

On July 1, 1917, the Southern Alberta Land Company, Limited, the Alberta Land Company, Limited, and the Canadian Wheatlands, Limited, were amalgamated under the title of the Canada Land and Irrigation Company, Limited. Some construction was undertaken late in the season, and will be continued in 1918 with a view to being able to deliver water to the first unit of approximately 50,000 acres before the end of the 1918 season.

##### *Taber Irrigation District.*

The time allowed to the Taber Irrigation district for entering into a contract for the supply of water having expired, the district was re-erected in 1917, the boundaries of the old district being changed so as to exclude all school lands and include an additional area to the east of the original district sufficient to make up the full 17,000 acres of irrigable land for which water is available. It is hoped that an agreement between the district and the Canadian Pacific Railway Company will be effected in time to permit of the construction of the system during 1918.

##### *Lethbridge Northern Irrigation Project.*

No field work has been done during the past season on the proposed Lethbridge Northern Irrigation System. Reservation of water supply from the Oldman river has been made based on the surveys and reports already completed.

#### OFFICE WORK.

Good progress has been made during the year in the preparation of the water administration records under the new system recently adopted.

#### DUTY OF WATER EXPERIMENTS AND DEMONSTRATION.

A record was kept of the water applied and the crops produced at the demonstration station at Strathmore. Experimental crop work on the proper duty of water was carried on at Ronalane. Data regarding the duty of water were collected at Coaldale and irrigated crop reports were submitted by the inspecting engineers for the Cypress Hills district, mainly in Saskatchewan, and for the Macleod district in Alberta.



PART V

WATER POWER







## REPORT OF THE SUPERINTENDENT OF WATER POWER.

J. B. CHALLIES, C.E. (Tor.), M.E.I.C.

The following report, with the attached report of J. T. Johnston, B.A.Sc., M.E. I.C., Chief Hydraulic Engineer, concerns the activities of the Dominion Water Power Branch for the fiscal year ending March 31, 1918:—

In submitting the attached report of the work of the Dominion Water Power Branch, for the fiscal year ending March 31, 1918, the writer begs to call special attention to the extremely important factor that water-power is now playing, and will continue to play, in the development of commerce and industry throughout the world. There can be no doubt as to the absolutely urgent and vital necessity of Canadian authorities doing everything possible to ascertain the water-power resources of the Dominion and to assist in their proper exploitation.

The world war, bringing with it a tremendous speeding up of industry in the manufacture and transportation of munitions, has taxed the power resources of every nation, the immediate cause of fuel and consequent power shortage has varied, but the result has been the same, namely an almost universal feverish activity in the more efficient use of existing power-producing agencies and the search for and investigation of new ones.

The return of peace will find all nations engaged in the keenest industrial competition. The vast burden of war debts cannot be borne by any nation failing to hold her own in this competition. Foreseeing this, and realizing the vital bearing of mechanical power in the struggle, the technical advisors of every country are studying its power resources not so much from the standpoint of present needs, but rather for the future.

In Great Britain proposals have been set forth for vast central station fuel-power plants at strategic points for the supply of power for all industries, in order to secure a more efficient use of coal, the extraction of all by-products is being urged, not merely on account of their vast value, but also to reduce the cost of power. Stock, too, is for the first time being systematically taken of the water-powers of the British Isles.

At the request of the British Government, a special committee of engineers and scientists, eminent in power production practice, and representative of all the important engineering and scientific societies of Great Britain has been engaged for some time in a study of the water-power resources of the whole empire. The result of the deliberations of this committee to date indicates that the Imperial Government will be urged to constitute at once a permanent power board representing the Governments of Great Britain and all the Overseas Dominions. The primary object of the board will be to assist in the investigation and development of the water-power resources of the Empire, in order that there may be no doubt about the further industrial development of any part of the British possessions so far as cheap dependable power may be a factor therein.

Among our allies the *United States*, faced with similar fuel conditions to ourselves, is taking active steps to mobilize her power resources, but is handicapped, as are some parts of Canada, by unsatisfactory water-power laws.



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*France*, until the war an importer of one-third of her coal, was faced by the loss to the enemy of a considerable proportion of her own mines and the rising price and difficulty of transportation for imported fuel. Promptly and in spite of many difficulties she has proceeded with hydro developments and by the end of this year will have 1,100,000 horse-power developed, an increase of 450,000 horse-power since 1910, two-thirds of which has been secured since war broke out.

*Italy*, lacking coal, is an excellent field for water-power development, and through the Allemeine Elektrische Gessellschaft, the great German electric machinery trust, popularly known as the A.E.G., the Germans secured a strangle-hold on Italian industry and by 1910 515,000 h.p. was developed. Since the outbreak of war the Italian Government has not merely broken the Teutonic hold of the A.E.G., but has proceeded with an active water-power policy. Recent information is that concessions for 208,000 horse-power were granted in 1917 and that in December, 1917, there were 218 requests for concessions, estimated at 816,000 horse-power in course of examination.

Neutral countries are well aware that they will have to compete in a much keener market after the war and we see signs of stimulated water-power activities in *Norway* and *Sweden* where the Scandinavian Governments are rendering every possible encouragement in the development and use of "white coal". Barcelona the "Manchester of Spain", a city of 300,000, is replacing steam power by hydro-electricity, and a Canadian Company has already completed a large portion of an extensive system of reservoirs and hydro-electric stations on the Noguera Pallaresa and Segre rivers.

Concerning enemy countries little authentic news has been available since 1914. *Germany* is not particularly rich in water-powers. Nevertheless, with half a million horse-power developed, or 31 per cent of the amount available, she led the world in percentage of utilization. *Austria-Hungary* is more richly endowed and rumors of war time hydro-electric developments filter through from time to time.

*Switzerland* has been called the "Industrial Annex" of Germany and in 1910 had 25 per cent of her water-powers developed.

This world-wide activity in hydro-electric power development proves the vital importance of water-power, and the urgent necessity of water-power being used to the maximum possible advantage in Canada, if this country is to realize her proper destiny.

Cheap power promises to be one of this country's greatest assets in the post bel-lum rivalry of nations for world trade. Canada's great fuel reserves, supported by her water-power resources, represent a sure source of cheap power and guarantee her share in world trade, provided they are availed of to their maximum possible advantage.

One of the most important and far-reaching factors in England's quick recovery from the exhaustion of the Napoleonic wars was the industrial impulse of the steam engine. The impetus to industry from cheap and unlimited electric energy, whether from coal or water-power, will, undoubtedly, prove as great a factor in the recovery of nations following the present world war. That nation which has a dependable source of power capable of producing energy cheaper than other nations will have a tremendous advantage.

Recognized experts on fuel and power matters generally, affirm that no country is more fortunate in respect of her fuel and power resources than is the Dominion of Canada.

The interdependence and interrelation of all the varied fuel-power agencies available in Canada—water-power, coal, oil and gas—necessitates some immediate and constructive organization for effecting their co-ordinate, concomitant development and use. The main function of such an agency should be the evolution of a national master fuel-power policy applicable to all parts of the Dominion, which will realize the maximum advantageous use of every fuel-power element.

Probably the most efficient, effective, inexpensive and immediate method of achieving such result would be the formation of a Fuel-Power Board consisting of the



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government officials from the different Federal departments who have for years been giving special attention to particular phases of the power problems of the Dominion, and who have, as direct result, amassed in their respective offices a great deal of valuable data concerning the present use and possibility of further use of all fuel and power resources.

The aggressive action of all other countries to investigate their water-power resources indicates how essential it is that data governing Canadian water-power sites, feasible and economic of development within a reasonable time, should be obtained promptly. It should be a source of great satisfaction that under war conditions every reasonable effort is being made by the Dominion and almost all the Provincial Governments to secure essential meteorological, hydrological, topographical, and economic data relating to our water-power resources. It is a pleasure to report that in all these efforts the Dominion Water Power Branch is taking a prominent part.

The accompanying report of Mr. J. T. Johnston, assistant superintendent, indicates in detail the nature and extent of the work accomplished by this branch in connection with water-power matters throughout the country.

The engineers of the Dominion Water Power Branch have assisted and co-operated effectively with the International Joint Commission, the Conservation Commission, the Honorary Advisory Council for Scientific and Industrial Research, the Nova Scotia Water Power Commission, various provincial departments, and also the Dominion Bureau of Statistics. Notwithstanding the very large percentage of officials of the branch serving overseas, essential work has been maintained without undue loss of efficiency or reduction in effective results.

### Report of the Chief Hydraulic Engineer.

J. T. JOHNSTON, B.A. Sc., C.E. (Tor.), M.E.I.C.

#### HYDROMETRIC SURVEYS.

Regular stream-measurement operations have been carried on throughout the year in the provinces of British Columbia, Manitoba, and Nova Scotia. Owing to the greatly reduced field staffs, as a result of enlistments for overseas service, there has been no opportunity for enlarging the general scope of the work and the principal effort made has been to maintain in operation the most essential established stations. In a few exceptional cases, additional stations have been established to meet the requirements of new and important projects. It is considered that under the circumstances a very satisfactory season's work has been accomplished.

The great activity which has developed in the Flin-Flon Mining District in Northern Saskatchewan has resulted in the receipt of several important power applications and in order to enable the department to formulate its policy before authorizing power-development operations, winter-flow measurements of the streams affected were essential.

Through co-operation with the Irrigation Branch, arrangements were made for securing winter measurements during the past season. The remoteness of the district rendered difficult the securing of a properly qualified engineer who could be trusted to undertake the work in a satisfactory manner under the severe climatic conditions prevailing in the district. The services of Mr. R. D. Fry were finally secured through Mr. Peters in Calgary, and under the combined instructions of the Irrigation Branch and of this branch covering the character and the scope of the informa-



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tion desired, Mr. Fry carried on a successful season's work throughout the months of January, February and March. Many very important discharge measurements were secured and we have now available some definite information as to low run-off conditions to be expected on the power rivers of the district. This information should, however, be supplemented by future measurements.

The question of changing the publication of the stream-measurement records from calendar to climatic-year periods has been under consideration for some time, and last November an important conference was held in Winnipeg, between the field officers of the Irrigation Branch and of this branch, at which all aspects of the question were thoroughly considered and discussed. A climatic year covering the period October 1 to September 30, was unanimously adopted as best meeting the requirements of all administrative departments concerned. This change is being effected in the reports covering the 1917 records. As a result of this decision, the stream-measurement reports of the provinces of British Columbia, Alberta, Saskatchewan, Manitoba, and Nova Scotia, were brought into uniformity. At a subsequent conference between the undersigned and the officials of the Hydro-Electric Power Commission in Toronto, it was arranged that a similar change be made in the manner of publishing the Ontario records. The provinces of Quebec, New Brunswick and Prince Edward Island do not as yet publish systematic stream-measurement records. When the publication of such records is commenced by these provinces, it is altogether likely that the climatic year will be adopted, making the system uniform from coast to coast.

#### BRITISH COLUMBIA HYDROMETRIC SURVEY.

The British Columbia Hydrometric Survey, under Mr. R. G. Swan as chief engineer, has continued its operations in co-operation with the provincial authorities along the lines outlined in previous reports.

Owing to the reduced staff, it was found necessary to discontinue operations in the Fort George district and to concentrate on the southern and more thickly settled portions of the province, where the information obtained is of more immediate importance. It is, however, of the utmost importance to the future development of the northern districts that stream-measurement work be resumed there as soon as conditions will permit.

Mr. Swan's organization co-operates, systematically and with uniformly satisfactory results, with the British Columbia Lands Branch and the Dominion Parks Branch. At the present time a further co-operative arrangement is being worked out with the Department of Indian Affairs whereby the services of the Hydrometric Survey staff will be at the disposal of that department for the consideration of the numerous important engineering problems which are continually arising in respect to the question of Indian reserves throughout the province and to the apportionment and utilization of water-rights in connection with the same. The importance and the economic efficiency of having available, at all times, an organization of trained engineers, expert in all the conflicting relationships of water to land, is being realized to a greater extent from day to day, and the services of the Hydrometric Survey staff, apart from the regular stream-measurement operations, are being continually utilized in increasing measure. During the past year numerous engineering reports on water-supply, log-booming, reclamation, foreshore, and irrigation, have been prepared by Mr. Swan's staff at a minimum of expense, and with most satisfactory results.

The stream-measurement report for the year 1916 has been published as Water Resources Paper No. 21. Material for the report covering the year 1917 is practically prepared and is being submitted to the King's Printer at an early date. It will be published as Water Resources Paper No. 23. This report will introduce the calendar year period and will include the records for the period January 1, 1917, to September 30, 1917. These reports are available for free distribution to all interested in problems of run-off of the rivers in British Columbia.



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## MANITOBA HYDROMETRIC SURVEY.

The stream-measurement work throughout the province of Manitoba has been continued throughout the year, under Mr. M. C. Hendry as chief engineer.

In the province of Manitoba, as in British Columbia, it has been necessary owing to the smallness of the present staff as a result of enlistments for overseas service, to largely confine the work to stations already established. Every effort has been made to maintain the regular stations which are of primary importance to the general questions of water-power, water-supply and reclamation throughout the province. Miscellaneous measurements on the important rivers in the unsettled portions of the province have been secured whenever opportunity offered. Particular attention has been given to the Pinawa Channel discharge, on the Winnipeg river, in connection with the improvements which are under way at the power-station of the Winnipeg Electric Railway Company.

The intensive study which has been carried on during the past few years at the outlets of the lake of the Woods, has been continued during the past year, and a continuous oversight has been maintained over all the conflicting aspects of the lake of the Woods regulation. In view of the vast importance of the lake of the Woods storage to power interests on the Winnipeg river in Manitoba, it is essential that this work should receive continuous and intensive study.

The report covering the stream measurements for the year 1916 has been published as Water Resources Paper No. 22. Material for the report covering the period January 1, 1917, to September 30, 1917, is now prepared and will be submitted to the King's Printer at an early date. This report covers a nine-month period and is designed to introduce the climatic year method of publishing data. It will be published as Water Resources Paper No. 24. These reports are available for free distribution to all interested in problems affected by the run-off of the rivers in the province of Manitoba.

## POWER AND STORAGE SURVEYS.

Special field investigations into power and storage projects have been very largely curtailed during the past year. Stream-measurement studies have, of course, been continued as outlined under the preceding section on hydrometric surveys. A very exhaustive study has been given in the office to a great number of the important projects which are awaiting better financial conditions pending development.

## MANITOBA.

Special arrangements were made with Mr. Hendry for closing the gap in the survey of the lower English river. The existence of this gap in the record made it impossible to consider the power features of the English river, as a whole, in conjunction with those of the Winnipeg. As only a few week's field work at little cost was involved, advantage was taken of a slack period to rush this work to completion. The field work was accordingly completed last September and October, and the department has now the complete data available upon which the entire question of power development on the English river, and of storage in lac Seul, can be intelligently studied.

No active construction operations were undertaken at the Grand Rapids on the Saskatchewan river, owing to difficulties experienced in financing. A careful study was, however, maintained of the governing run-off conditions at Pas and Grand Rapids.

Supervision was continued over the new construction operations at the plant of the Winnipeg Electric Railway Company, on the Pinawa channel of the Winnipeg river. The new work undertaken by the company has been carried on to the entire satisfaction of our inspecting engineer. Extensive additions being made to the mu-



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nicipal plant of the city of Winnipeg at Point du Bois, on the Winnipeg river, have also been carried on, under supervision, in a satisfactory manner. Mr. W. J. Ireland, assistant chief engineer to Mr. Hendry, has acted as inspecting engineer in the above two instances, in addition to his other duties.

A detailed and up-to-date analysis of the water-powers of Manitoba is now under way, in accordance with the general inventory which is being made of the water resources of the Dominion. The index inventory referred to in the last annual report is being applied to all phases of the Manitoba work, and is giving most satisfactory results. The revised Manitoba power data will come to hand at an early date.

#### ALBERTA AND SASKATCHEWAN.

Mr. Attwood, Chief Engineer of Power and Storage Surveys in Alberta and Saskatchewan has given attention to the detailed analysis of special power problems in this district, the physical data relative to which has already been collected, and to a systematic and detailed analysis of the entire power and storage resources of the two provinces of Alberta and Saskatchewan, in accordance with the requirements of the general water resources inventory. The power and storage data which has been collected by this branch, covering these two provinces is being restudied, analysed and filed under the new index inventory. When this work is completed it will be available for ready reference at a few moment's notice.

A detailed study has been made of the power situation in the Flin-Flon Mining District and very careful consideration has been given to the various applications which are before the department for power development there. The question of diverting water from one watershed to another is involved in one of the applications and before final action can be taken in the matter, it will be necessary that field studies be made.

Special reports have been prepared by Mr. Attwood on many small power applications which have received consideration during the past year.

The general administrative policy of the branch has been continued. Applicants for water-power privileges have been furnished with all the data available in the department and particular attention has been given to the developers of small local water-powers. In brief, every effort has been made to secure the development of desirable power undertakings and to discourage the development of wasteful and uneconomical projects.

#### RECOMMENDATIONS FOR FUTURE WORK.

Under conditions arising from the war, it is not considered advisable to inaugurate any extensive field investigations into power prospects in remote districts and beyond the limit of early prospective development. Only those locations and projects which may be developed to advantage at the present time should receive aggressive field-study. The following field-work should be kept in view to be carried out as soon as conditions permit:—

1. A comprehensive field investigation of the proposals now before the department for the development of water-power in the Flin-Flon Mining District in northern Saskatchewan. The very important principle of diverting run-off from one watershed to another is involved in the power project, and the department must be thoroughly seized of all the physical facts involved before determining its policy in the matter. As the mining development in this region is largely dependent upon the securing of a dependable source of power, this field investigation should be completed at as early a date as practicable.
2. A detailed study should be made of one or more of the more accessible power sites on the Nelson river, in order that the department may have reliable and



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definite data available for immediate reference as occasion demands. The construction of the Hudson Bay Railway has brought the unparalleled power resources of the Nelson river within reach of industrial enterprise.

3. A detailed investigation should be made into a combined project at Meadow Portage, incorporating the power, navigation, and reclamation features. This site has received a great deal of attention from the public during the past few years and should be definitely analysed.
4. The line of precise levels along the Winnipeg river, which has been partially completed, should be continued to cover the entire power reach in Manitoba.
5. Systematic investigation into the northern rivers of the three Prairie Provinces should be continued by reconnaissance investigation.
6. Arrangements should be made, in the future, for the systematic covering of all those sections and rivers, in the more settled portions of the Prairie Provinces, which have been omitted from the investigations to date.

## NOVA SCOTIA WATER POWER AND STORAGE INVESTIGATIONS.

The agreement between this department and the Nova Scotia Water Power Commission, covering the investigations into the power resources of the province of Nova Scotia, has been continued with mutually satisfactory results throughout the past season. The work is under the direction of Mr. K. H. Smith of this department, as district engineer, and has progressed systematically and efficiently.

Regular stream-measurement stations are maintained throughout the province and the power rivers are being systematically investigated in the field in the order of their importance. Precipitation and evaporation stations are maintained by co-operation with the Canadian Meteorological Service.

Power surveys and investigations have been completed during the past fiscal year on the following streams: West River Sheet Harbour, Liverpool river, Medway river, Lahave river, Mushamush river, Petite Riviere and St. Croix river. In addition, investigations were made of a number of small individual power sites as follows: Annapolis river, at Lawrencetown; Annapolis river, south branch, at Factorydale near Berwick; James river, near Antigonish; South river Antigonish, at Fraser's mills, East river St. Mary, Rocky Mountain site.

These field investigations include a thorough study by reconnaissance methods of the storage possibilities in each watershed and field profiles of the rivers affected, supplemented by detail work at all possible or prospective dam and power sites.

The annual progress report covering the operations for the provincial fiscal year ending September 30, 1917, was prepared by Mr. Smith for the commission. This report covers in detail the entire stream-measurement and water-power investigations carried on during the preceding year. The report is at the present time in the hands of the King's Printer, in Nova Scotia, and will be published at the expense of the commission for free distribution to all interested in the water-powers of Nova Scotia.

The progress of the investigations to date has been exceptionally satisfactory, and a dependable analysis of the water-powers of the province is being effected in a most efficient and economical manner.

## DOMINION LAND SURVEYS AND RECLAMATION.

In connection with the administration of water-powers, it has been our policy to thoroughly investigate all power possibilities feasible and probable of development in the near future, as far as possible in advance of their anticipated actual development. This has involved the determination of the flood contour with respect to most of the sites investigated in order that the reservation of essential lands may be made in advance of their settlement or other disposition.



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The reservation of large blocks of land for power purposes has had a tendency to cause some temporary hardship to a certain few settlers in the vicinity of power sites, until the flood contour is accurately defined and tied in to the regular Dominion land survey lines when settlement and disposition of lands not actually needed can be made. It has, therefore, become the settled policy of the department to deal with power-site needs as they become acute. Mr. T. H. Dunn, D.L.S., has been attending to a considerable portion of this work in conjunction with his reclamation field studies. During the past season several land situations of this nature were dealt with by Mr. Dunn.

The lowering of lake Winnipegosis and the water-power and navigation questions which are involved with the reclamation features has also received Mr. Dunn's attention.

#### INTERNATIONAL JOINT COMMISSION.

The International Joint Commission has completed its report on the Lake of the Woods reference and has submitted the same with certain definite recommendations to the respective Governments of Canada and the United States.

This reference has been before the commission since 1912, and has involved many conflicting interests of navigation, power, and fishing, and the flooding of lands and properties around the lake borders. From the date when the reference was first submitted to the commission its vital importance to the power interests on the Winnipeg river, below the lake, has been fully realized by this department and every possible measure taken to ensure that the rights and requirements of these power interests should be properly presented to the commission.

As there was serious conflict between what the various interests affected considered best suited their individual requirements, and as many of these interests were of very great importance, the reference before the commission required very careful consideration and intensive study. The outstanding position of the power interests and their dependence upon a substantial storage range in the lake was presented to the commission at the various hearings by means of comprehensive reports, memoranda, statements and oral argument. In this connection the individual companies and municipalities affected have co-operated with this Branch to the advantage of all concerned throughout the entire period of the reference.

The Lake of the Woods Technical Board, organized for the purpose of correlating the conflicting Canadian interests, gave prolonged study to the entire question and was instrumental in preventing conflicting claims and representations being made to the commission by Canadian interests. The final recommendations of the technical board were very largely adopted in the findings of the commission.

A large measure of storage in the Lake of the Woods is absolutely essential to complete utilization and to the successful economic development of upwards of 500,000 horse-power on the Winnipeg river. This was clearly presented to the commission, and it is satisfactory to note that as a result the commission has recommended that a five-foot storage range between elevations 1056 and 1061 be left entirely in the hands of a domestic control board. When the lake falls below or rises above these elevations, the commission has recommended that the control of the regulations be placed in the hands of an international board for the protection of international interests. Provision is made for the lowering of the low limit, in exceptionally low water seasons, with the approval of the commission. The ordinary maximum level has been placed at elevation 1061.25 with the provision that this may be somewhat increased in the future when the enlargement of the lake outlets as recommended by the commission has been made.

In brief, the power interests are assured of a five-foot storage range on the lake. Although this is not all the power interests desire and need it is probably fairly satisfactory. At any rate it makes available a reservoir for the tiding over of low water



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periods in the river below. The power interests in Manitoba benefiting by this storage have already expressed themselves informally to the department as being willing to bear their share of the cost involved.

The recommendations of the commission are at the present time before the two governments concerned who, it is hoped, will take early favourable action in connection therewith.

## LAKE OF THE WOODS REGULATION.

Pending the adoption by the Canadian and the United States Governments of the recommendations made by the International Joint Commission in respect to the Lake of the Woods reference, the control of the Lake of the Woods regulation has been continued as outlined in the last annual report. The arrangement made in September, 1916, between this office and the Department of Public Works of the province of Ontario, whereby this branch would advise the Ontario authorities as to the operation of the Norman dam, has worked out satisfactorily. The systematic records which are received daily and weekly from various points throughout the watershed covering meteorological and run-off conditions, are such that our officers are at all times informed as to the prevailing governing conditions. It is accordingly possible to take intelligent action at the Norman dam to provide for the present and future requirements of the interests affected by the river discharge or by the lake level, and at the same time to forestall such unusual flood conditions as maintained during the summer of 1916. In brief, the regulation of the lake level is at the present time based upon the conditions maintaining throughout the entire watershed and not upon the local requirements of any particular interest or set of interests. The lake has, in consequence, been maintained at a satisfactory and fairly uniform level and ample water has been provided at all seasons for the power interests. At the present time steps are being taken to prepare the lake for possible flood in flows following the spring run-off. It is considered that the situation is well in hand.

## WATER RESOURCES INVENTORY.

The detailed investigations carried out by our field parties in various parts of the Dominion resulted in the accumulation of a great amount of reliable water-resource information. In addition to this first-hand data, co-operation with other federal departments and with provincial organizations interested in water-resource administration, has brought us into direct touch with all resource investigations which have been made through the entire Dominion.

In the past the information secured by the many different Dominion and provincial organizations concerned has not been correlated and it has consequently not been available at any one place for ready reference or for systematic analysis. Numerous inquiries from responsible quarters in Canada, in Great Britain and in foreign countries, having as their object the securing of accurate information respecting Canada's water-powers and their relation to timber resources, mineral resources, transportation systems (rail and canal), industrial centres, industrial possibilities, electro-chemical opportunities, etc., have indicated the urgent necessity of some central bureau for receiving and co-ordinating all available water-power and cognate data. Up to date these inquiries have been dealt with as promptly and as satisfactorily as the nature of the data on hand would permit. At the same time it has been realized that the basic data, upon which these various analyses must be made, should be more systematically compiled and arranged, and various steps have been under way during the past two years to achieve this result. In order that the final results should be permanently satisfactory, it was essential that the methods adopted should be broad and thorough, and should depend upon the harmonious co-operation of all Federal and provincial departments and organizations interested in or affected by the administration of water-powers or the investigation of water resources.



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The desired mutually satisfactory co-operation has already been achieved, without any dislocation or curtailment of the activities of any existing organizations, and the water resources index to which reference was made in the last annual report has now been practically perfected. The filing scheme in all its details has been finally worked out and the index maps, cards and folders prepared.

While the staff of the branch has been reduced to the minimum possible limits owing to the absence of members on overseas service, and as it has consequently been necessary to materially limit field investigations, it is considered that the work has been maintained in a satisfactory manner and that nothing of really vital importance has been unduly neglected. This has been made possible largely by the reduced staff cheerfully undertaking overtime work at all seasons in order that the best interests of the department should not suffer. I take pleasure in bringing to your attention this summary of the season's operations and of the satisfactory results secured.